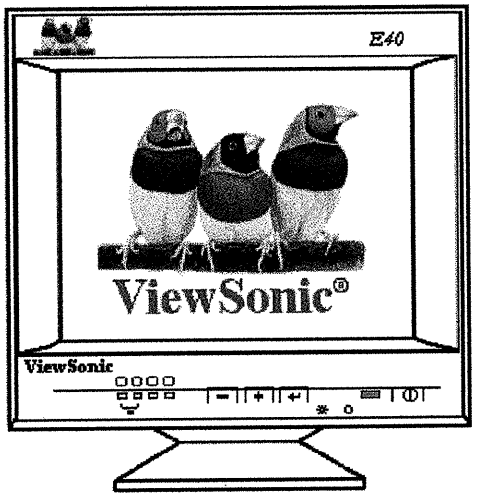
Service Manual

ViewSonic E40-3

Model No. VCDTS21384-1

14" Digital Controlled Color Monitor
E^2 Series



(Rev. 2 – June 1999)

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Revision History

Revision	Date	Description Of Changes	Approval
1.0	4/26/99	Initial Issue	T. Sears
2.0	6/22/99	Corrected Model # on Cover	T. Sears

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1. SAFETY PRECAUTIONS

(A). Observe all safety related notes located inside the monitor cabinet.

(B). Operation of the monitors inside the cabinet or with the cover removed may involve a shock hazard from the power supply. No work on these monitors should be attempted by anyone who is not thoroughly familiar with the necessary precautions when working on high voltage equipment's.

(C). Do not install, remove or handle the picture tube in any manner unless shatter proof goggles are worn. People not so equipped should be kept away while handling picture tubes. Keep picture tubes away from the body while handling.

(D). Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-RAY radiation or other hazards.

(E). Before returning a serviced display to the customer, a thorough safety test must be performed to verify that the display is safe to operate without danger of shock. Always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as screw heads. Test method for current leakage is as follows:

(a) Plug the AC line core directly into rated AC outlet (do not use a line isolation transformer during this check).

(b) Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner: Connect a 1500 ohms 10 watt resistor, paralleled by a 0.15mfd, AC type capacitor between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts simultaneously. Measure the AC voltage across the combination of 1500 ohms resistor and 0.15mfd capacitor.

(c) Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part.

(d) Voltage measured must not exceed 0.3 volts RMS. This corresponds to 0.2 milliamp AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

2. GENERAL TECHNICAL DATA

I. General

A. AC input100 ~ 240 Vac, 60/50 Hz
B. Power consumption80W (maximum)
C. Operating temperature5 ~ 35(41 ~ 95)
D. Weight(N.W/G.W)11.4/13kg
E. Dimensions (WHD)356364379 mm

II. CRT specification

A. SIZE14 inch diagram
B. PhosphorP22 medium short persistence
C. Dot pitch0.28 mm
D. Deflection angle90 degree
E. FaceplateTint non-glare
Anti-static treatment

III. Video input signal

A. Amplitude0.7 Vp-p analog input
B. Input impedance75 ohms
C. Polaritypositive bright

IV. Sync input signal

A. Sync levelTTL level
B. Sync polaritypositive or negative
C. Horizontal frequency31 ~ 50KHz
D. Vertical frequency 50 ~ 90Hz

V. D-Sub connector Pin Assignment

Pin No.	Assignment	Sensitivity
1	Red video input	0.7 Vp-p analog/75Ω
2	Green video input	0.7 Vp-p analog/75Ω
3	Blue video input	0.7 Vp-p analog/75Ω
4	Ground	
5	Self test input	Low if connected to computer
6	Red video ground	
7	Green video ground	
8	Blue video ground	
9	No connection	
10	Ground	
11	Ground	
12	SDA	
13	Horizontal sync input	TTL level
14	Vertical sync input	TTL level
15	SCL	

6. SIGNAL INPUT

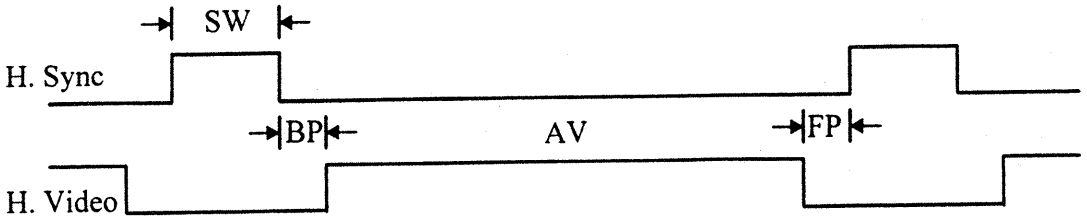
A. Signal Timing

Mode		(1) VGA	(2) VGA	(3) VGA	(4) SVGA	(5) 8514A
Resolution		640*350	720*400	640*480	800*600	1024*768
H. Sync Polarity						
V. Sync Polarity						
H. Frequency	(KHz)	31.468	31.468	31.468	35.156	35.522
H. Period	(us)	31.778	31.778	31.778	28.444	28.151
Front Porch(FP)	(us)	0.636	0.636	0.636	0.666	0.178
Sync Width(SW)	(us)	3.813	3.813	3.813	2.000	3.920
Back Porch(BP)	(us)	1.907	1.907	1.907	3.556	1.247
Blank	(us)	6.356	6.356	6.356	6.222	5.345
Active Video	(us)	25.422	25.422	25.422	22.222	22.806
V. Frequency	(Hz)	70.087	70.087	59.941	56.250	86.958
V. Period	(ms)	14.268	14.268	16.683	17.778	11.500
Front Porch(FP)	(ms)	1.175	0.381	0.317	0.028	0.014
Sync Width(SW)	(ms)	0.064	0.064	0.064	0.057	0.113
Back Porch(BP)	(ms)	1.907	1.112	1.049	0.626	0.563
Blank	(ms)	3.146	1.557	1.430	0.711	0.690
Active Video	(ms)	11.122	12.711	15.253	17.067	10.810
Interlaced		NO	NO	NO	NO	YES

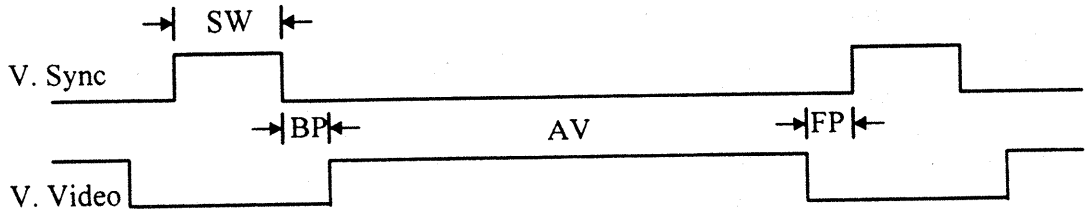
Mode		(6) VESA	(7) VESA	(8) VESA	(9) VESA	(10) VESA
Resolution		640*480	640*480	800*600	800*600	1024*768
H. Sync Polarity						
V. Sync Polarity						
H. Frequency	(KHz)	37.860	37.500	37.879	46.875	48.363
H. Period	(us)	26.413	26.667	26.400	21.333	20.667
Front Porch(FP)	(us)	0.508	0.508	1.000	0.323	0.369
Sync Width(SW)	(us)	1.270	2.032	3.200	1.616	2.092
Back Porch(BP)	(us)	3.810	3.810	2.200	3.232	2.462
Blank	(us)	5.587	6.350	6.400	5.171	4.923
Active Video	(us)	20.317	20.317	20.000	16.162	15.754
V. Frequency	(Hz)	72.809	75.000	60.317	75.000	60.004
V. Period	(ms)	13.735	13.333	16.579	13.333	16.666
Front Porch(FP)	(ms)	0.026	0.027	0.026	0.021	0.062
Sync Width(SW)	(ms)	0.079	0.079	0.106	0.064	0.124
Back Porch(BP)	(ms)	0.528	0.427	0.607	0.448	0.600
Blank	(ms)	0.634	0.533	0.739	0.533	0.786
Active Video	(ms)	12.678	12.800	15.840	12.800	15.880
Interlaced		NO	NO	NO	NO	NO

B. Signal Timing Chart

1. Horizontal Timing Chart



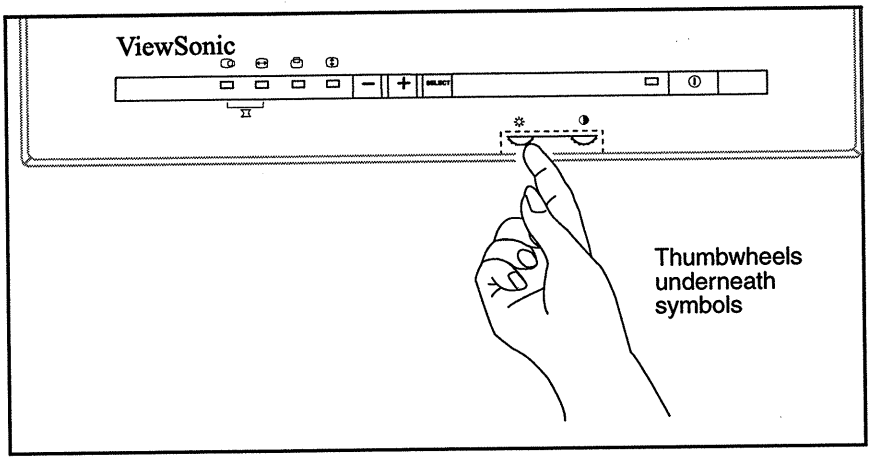
2. Vertical Timing Chart



SW = Sync Width FP = Front Porch AV = Active Video BP = Back Porch

7. TIMING DIAGRAM & TABLE

A. External Control



BRIGHTNESS adjusts background black level of screen image. Thumbwheel is hidden underneath the symbol.
Turn thumbwheel to increase or decrease brightness.

CONTRAST adjusts foreground white level of screen image. Thumbwheel is hidden underneath the symbol.
Turn thumbwheel to increase or decrease contrast.

HORIZONTAL POSITION moves the screen image left or right.
[-] moves screen to left, [+] moves screen to right.

HORIZONTAL SIZE adjusts the width of the screen image.
[-] decreases width, [+] increases width.

VERTICAL POSITION moves the screen up and down.
[-] moves screen down, [+] moves screen up.

VERTICAL SIZE adjusts the height of the screen.
[-] decreases screen height, [+] increases screen height.

PINCUSHION, with two LEDs lit up, straightens vertical sides of the screen.
[-] curves vertical edges inward, [+] curves vertical edges outward.

B. Digital Features

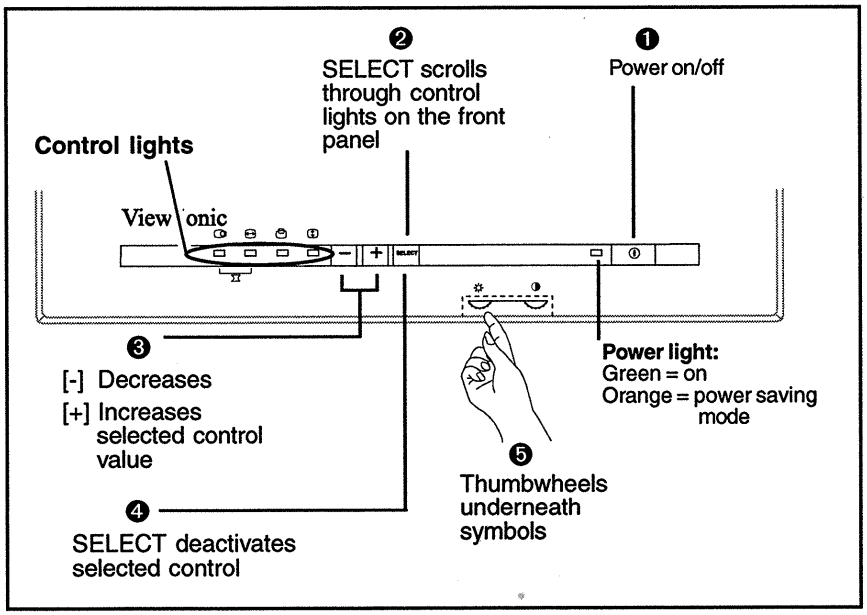
I. This monitor has adapted an advanced CPU to control the H-CENTER, the H-SIZE, the V-CENTER, the V-
A. SIZE, PINCUSHION, and it will auto save into memory the image modes whenever the user changed them.
II. This monitor includes 10 sets of factory preset timing (see the following table) and 25 sets of user definable
A. timing.
III. Push up-down key together and wait 0.5 second, the image automatically recalls factory presets.

8. USING TACTILE SWITCH FUNCTIONS

- Press the function button to activate the LEDS and scroll through functions.
- Tactile switch icons and meanings.

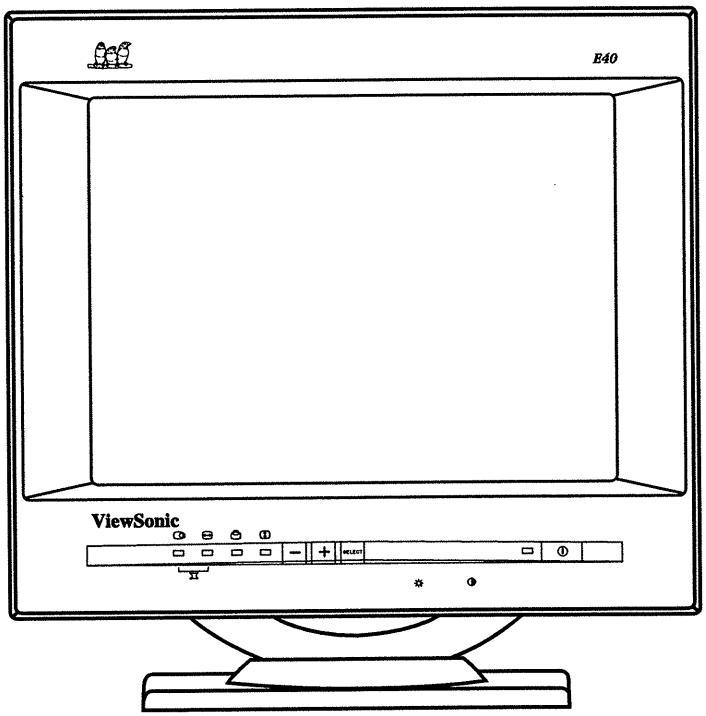
Adjust your **ViewSonic *E40*** monitor using the control buttons on the front panel in the sequence shown below. Also see page 8 for more detail on each control.

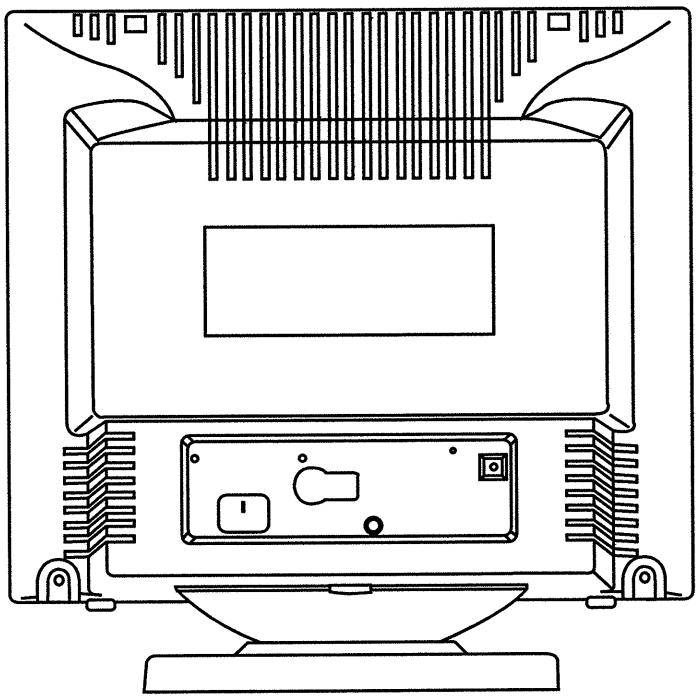
Front Control Panel



Note:
The monitor automatically degausses when you turn on the monitor. Degaussing removes magnetic field build up that can affect color purity and convergence. If you turn on the monitor and need to degauss again, wait 15 minutes before turning the unit on again.

3. MONITOR - FRONT AND REAR VIEWS





4. ADJUSTMENT INSTRUCTIONS

1. GENERAL

(a) Ac input: 100 ~ 240 Vac(10%)

(b) Instruments:

(1) Signal Generators:

--Chroma: model:2130,2135,2250

--VG812,VG815

--PC: it must can apply the exact timings which is listed in the engineering spec.

(2) Color analyzer: CA100 (Minolta)

(3) Digital voltmeter (or multimeter)

(4) Oscilloscope

(c) It must warm up at least 30 minutes before adjustment of white balance and convergence.

(d) It need not any signal be applied to the monitor when the free running frequency is being adjusted.

2. VOLTAGE SETTING

(a) Apply a video signal in the 640 × 480 with 31.468KHZ/60HZ Mode.

(b) Select the "cross-hatch" pattern.

(c) Set the brightness front control (VR 404) and contrast front control (VR405) to the maximum position.

(d) Test point: TP3 on CRT board.

(e) Adjust VR801 so that TP3 is 120.05V (11.95V ~ 12.05V).

(f) Adjust VR832 set the HV is 240.1KV with the HV probe.

3. ADJUSTMENT OF FREE RUNNING FREQUENCY

(a) Apply a video signal in the 640 x 480 with 31.46KHz / 60Hz mode.

(b) Select the "Cross-hatch" pattern.

(c) Set the brightness and contrast front control to the maximum position.

(d) Connecting TP2 to GND.

(e) Adjust VR401 so that the picture on the screen is at optimum state.

(f) To separate TP2 from GND.

4. FOCUS SETTING

(a) Apply a video signal in the 800 × 600 with 46.9KHZ / 75HZ mode.

(b) Select the character pattern ("pattern 86" in chroma 2135)

(c) Set the brightness and contrast front control to the maximum position.

(d) Adjust the focus VR on the FBT so that the picture at 2/3 of the diagonal lines (from center to four corner) the displayed screen is as sharp as possible.

5. ADJUSTMENT OF WHITE BALANCE (W/B)

5.1 Adjustment of cut-off

(a) Apply a signal in the 1024 × 768 with 48.363KHZ / 60HZ mode.

(b) Select the "raster" (no video signal) pattern.

(c) Set the brightness and contrast front control to the maximum position.

(d) Adjust the screen VR on the FBT so that the brightness reading value Y of the displayed screen is 0.6F. ± 0.1 F.L .

(e) Fixed VR906

(f) Adjust VR901 so that the reading value y of color analyzer (CA-100) is 0.303 ± 0.005.

(g) Adjust VR903 so that the reading value x of color analyzer (CA-100) is 0.281 ± 0.005.

(h) Repeat the steps (d) to (g) until the reading value of color analyzer is correct.

5.2 Adjustment of sub-contrast and high brightness w / b:

(a) Apply a video signal in the 1024 × 768 with 48.363KHZ / 60HZ mode.

(b) Select the "white block" pattern (50mm × 50mm) .

(c) Set the brightness front control to the center click position and the contrast front control to the maximum position.

(d) Adjust VR406 so that the brightness reading value Y is 50 F.L ± 1.0 F.L .

(e) Select the "full white" pattern.

(f) Set the brightness to the center click position and contrast to 10 F.L .

(g) Adjust VR904 and VR906 so that the reading value x is 0.281 ± 0.003 and y is 0.311 ± 0.003 .

6. ADJUSTMENT OF FULL WHITE BRIGHTNESS

(a) Apply a video signal in the 1024 × 768 with 48.363KHZ / 60HZ mode.

(b) Select the " full white" pattern.

(c) Set the brightness front control to the center click position and the contrast front control to the maximum position.

(d) Adjust VR407 so that the brightness reading value Y is 32 F.L ± 1 F.L .

7. H-CENTER SETTING

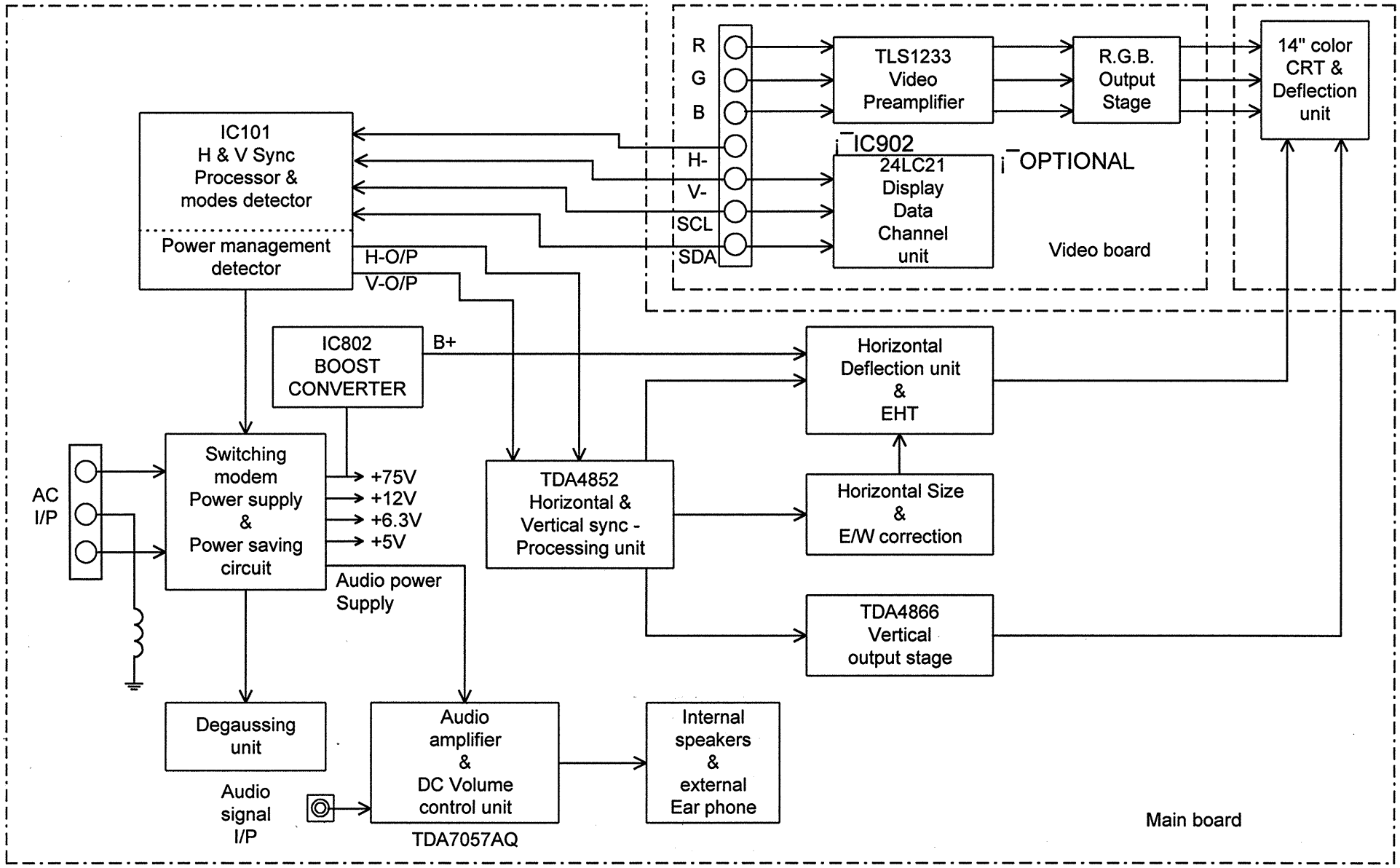
(a) Apply a Video Signal in the 1024 × 768 with 48.363KHZ / 60HZ mode.

(b) Select the “cross-hatch” pattern.

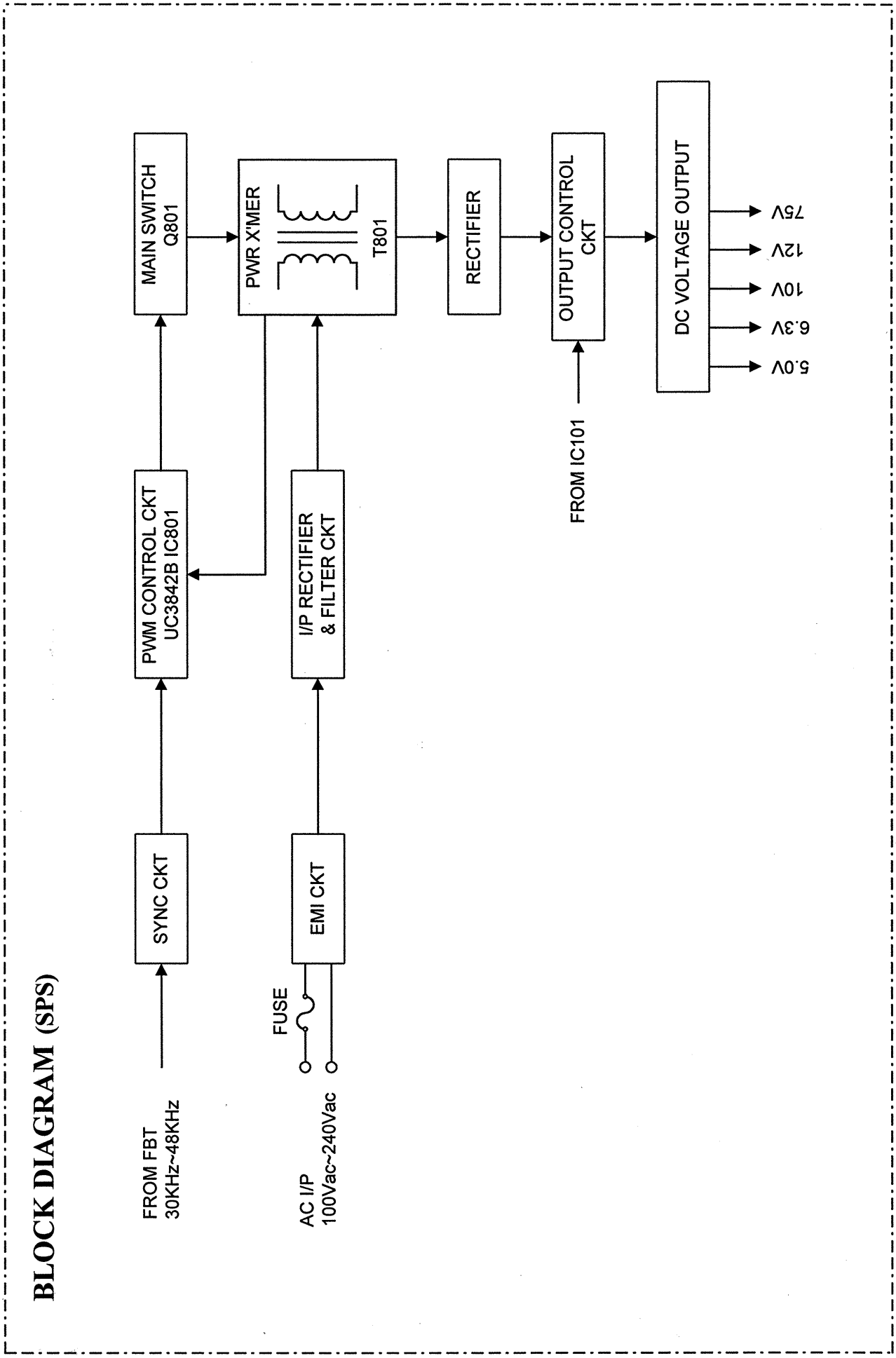
(c) Set brightness front control to the maximum position.

(d) Adjust S401 so that the “Raster” is set at the center position of the displayed screen.

5. BLOCK DIAGRAM (MAIN & VIDEO BOARD)



BLOCK DIAGRAM (SPS)

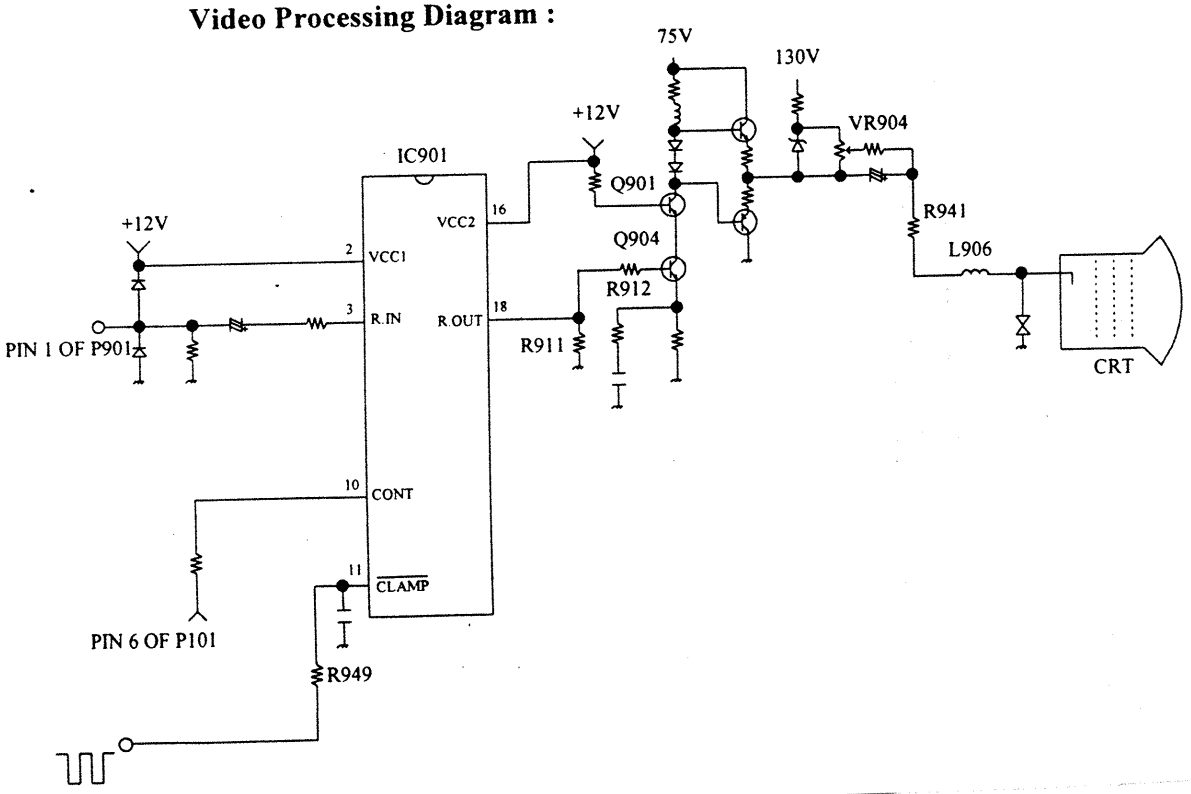


6.ELECTRONIC CIRCUIT DESCRIPTION

6-1. VIDEO PROCESSING

1. The diagram shows only R channel
2. The R.G.B video input signal is applied to pin3 of IC901 and amplified by the preamplifier (IC 901) and output stages.
3. The output amplifier is a cascode amplifier and is formed by the transistor Q901 and Q904, output signal goes through a pull-push to drive CRT.
4. The DC level of the output can be adjusted by varying the value of VR904 and the cut-off adjustments can be executed.
5. The clamping pulse on pin11 of IC901 is derived from the negative H-sync output (pin33) of IC101(WT6014) via R949, which holds the DC bias of the video amplifiers and CRT cathodes constant during the black level reference portion of the video waveform.
6. The contrast control (pin10 of IC901) is a dc-operated attenuator which varies the ac gain of all three amplifiers simultaneously.

Video Processing Diagram :



6-2. MICRO PROCESSOR AND POWER SAVING DETECTOR

1. IC101 is used for discriminating sync signal and detecting power saving mode.
2. Two separated H & V sync. signal with positive or negative polarity is directly applied to pin39 and pin40 of IC101, it will be transferred to fixed negative polarity outputs (Pin 32 and Pin 33 of IC101) on both horizontal and vertical sync. signals.
3. Pin 17 to Pin 18 of IC101 are horizontal frequency discriminator pins. It can be used for phase, size, pincushion compensation and Cs capacitor control. The logical truth table is shown below.

Pin H-sync	Pin 18	Pin 17
Hs < 36.5K	0	0
36.5K < Hs < 40K	0	1
40K < Hs < 50K	1	0
Hs > 50K	1	1

4. The tolerance for H-sync frequency discrimination is ± 0.1 KHz.
5. There are 8 PWM O/P'S of IC101, six for user control external. Two for Hor. osc and H-size compensation internal.
6. The volume control is optional for audio amplifier when ping is pull low, this function is disabled.
7. Pin 10 is in low level O/P if sync signals were not present when PWR ON, it is high level output normally. This function is used to get a lighter background in factory burn-in and will display a "No Input Signal" message.

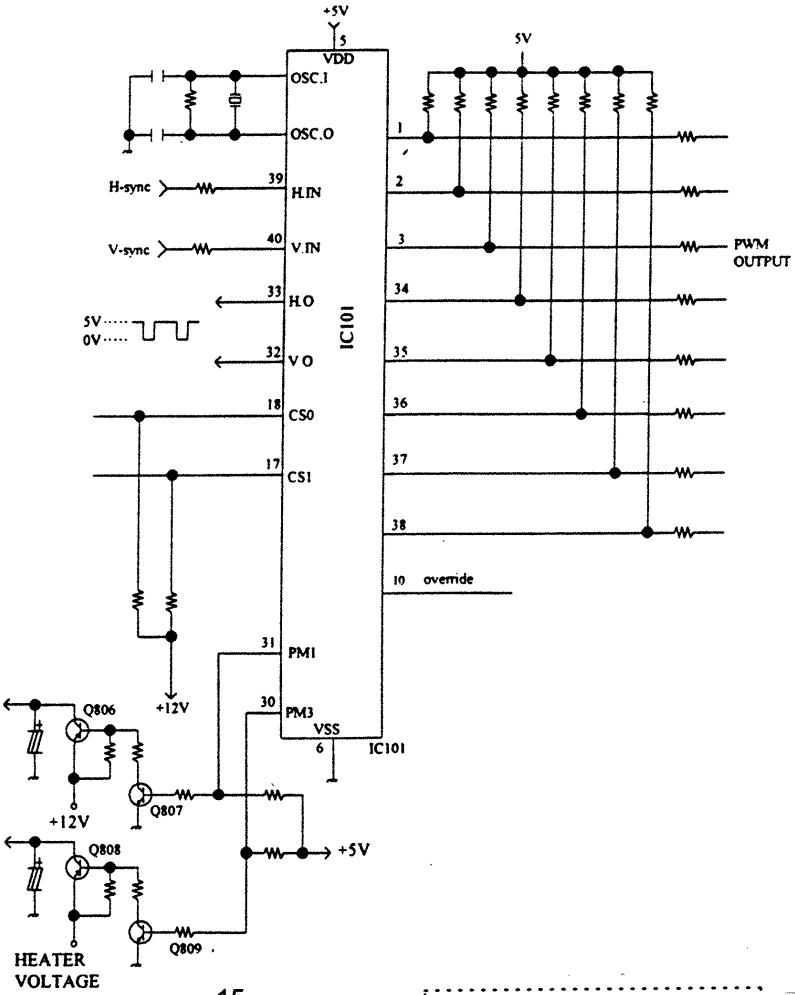
8. The truth table of power saving detector:

Mode	H-sync	V-sync	Pin 30 of IC101 (PM1)	Pin 31 of IC101 (PM3)	Q807	Q809
ON	Pulses	Pulses	1	1	ON	ON
Stand by	No Pulse	Pulses	0	1	OFF	ON
Suspend	Pulses	No Pulse	0	1	ON	OFF
Off	No Pulse	Pulses	0	0	OFF	OFF
Override	No Pulse	No pulse	1	1	ON	ON
	Manually power on					

* "No Pulse" represents the frequency of Hsync or V-sync is less than or equal to 10HZ.

* "Pulses" represents the frequency of H-sync is greater than or equal to 29KHz and lower than 50KHz and V-sync is greater than or equal to 40Hz and lower than 110Hz.

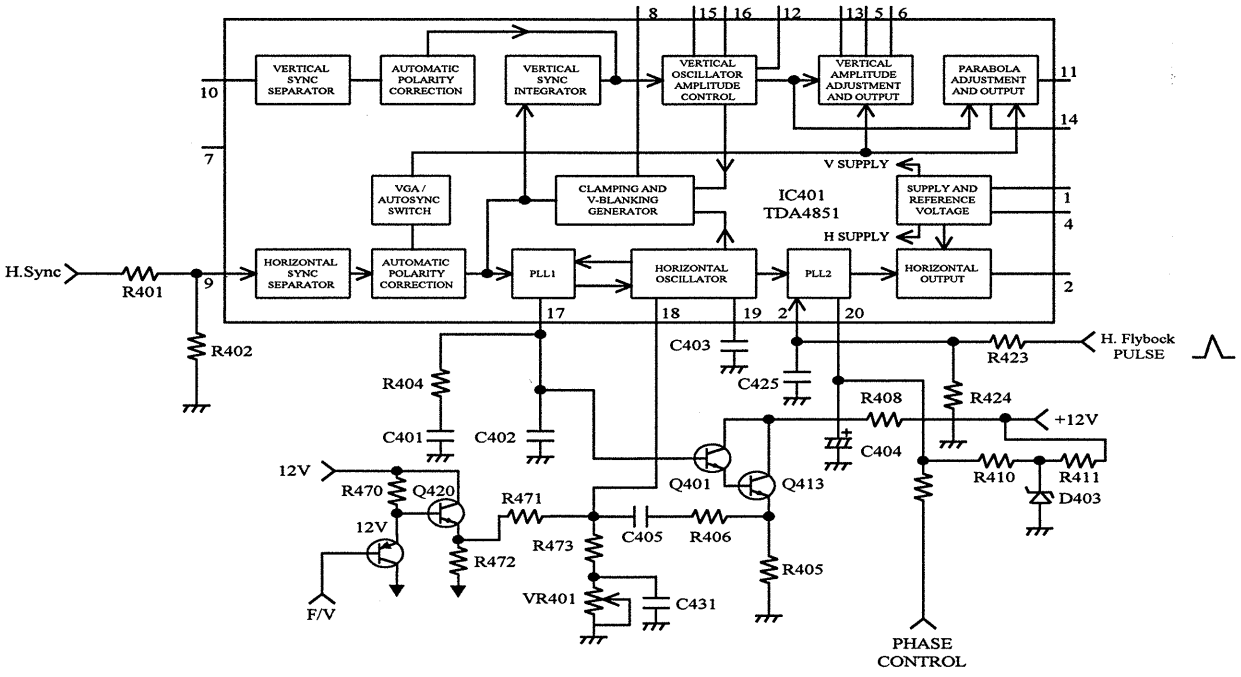
Synchronous Signal Discriminator and Power Saving Detector



6-3. HORIZONTAL OSCILLATOR & PHASE CONTROL

1. The internal oscillator is controlled by the PLL 1 circuitry. The PLL 1 circuitry receives the horizontal sync. signal as reference.
2. The free running frequency of horizontal oscillator can be externally controlled by current drawn from Pin 18, via VR401 R473R471.
3. With VR401 the free running frequency can be adjusted . in VGA mode. The F/V voltage via Q420Q421 as buffer applied to PIN 18 of IC401 for oscillator when mode change.
4. Network R404C401C402Q401Q413C405 and R406 determines the PLL speed and catching behaviour.
5. Horizontal phase adjustment is realized by changing the phase between the horizontal flyback pulse (pin 2 of IC401) and incoming horizontal sync. (Pin 9 of IC401)
6. Phase can be externally controlled with the PLL 2 circuitry by drawn the current out or into pin 20 of IC401.

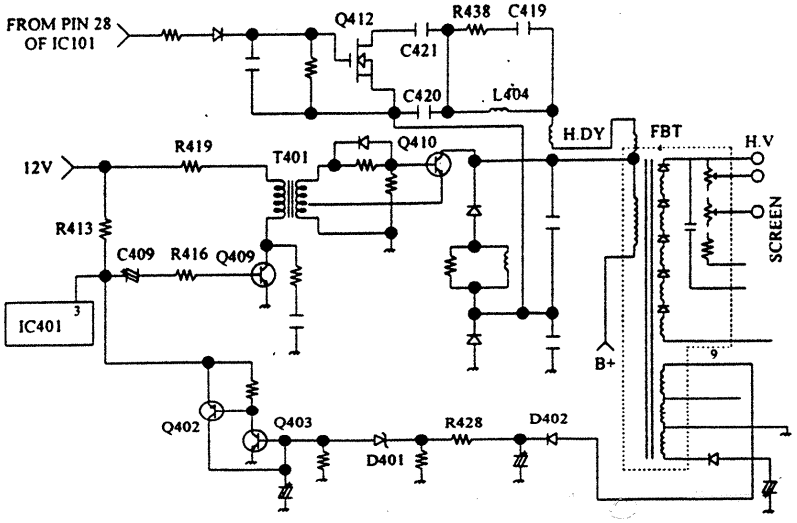
Horizontal Oscillator and Phase Control



6-4. HORIZONTAL DEFLECTION AND PROTECTION CIRCUIT

1. The horizontal drive pulse which comes from Pin 32 of IC401 directly switches off and on transistor Q409.
2. When Q409 is conducting , a current will flow in the primary winding of T401 storing energy in the transformer, when Q409 is cut-off, the transformer energy will supply the base current for the output driver Q410.
3. When Q410 is cut-off, a flyback pulse is produced at the collector of Q410, this pulse is transferred and rectified by the FBT to obtain a high voltage for anode of CRT.
4. The horizontal output pulse at Pin 3 of IC401 is amplified by Q409 and coupled by T401 to the horizontal output transistor Q410 for on-off control, thus sawtooth wave form current through the horizontal deflection yoke is obtained.
5. The function of L404 (linearity coil) is to correct the asymmetrical non-linearity of picture.
6. The function of C420 and C421 (S-correction capacitor) is to correct symmetrical non-linear distortion of equidistant lines. when the horizontal frequency is between 31.5KHz and 38 KHz, C420 and C421 are in parallel. If horizontal frequency is larger than 40KHz, only C420 is in action.
7. Protection circuit
   - A. During normal operation, the pulse voltage at Pin 9 of FBT is about 53 Vpp.
   - B. The high voltage for anode of CRT increases, the voltage at Pin 9 of FBT also increases. when this voltage abnormally increases and switches on D401,Q403 and Q402 (Via D402 and R428), it will shorten the horizontal output pulse at Pin 3 of IC401 to GND. At this time Q409 is cut-off, it will stop the horizontal deflection action and protection function is active.

Horizontal Deflection and Protection Circuit



6-5. VERTICAL DRIVE AND VERTICAL SIZE CONTROL

I. The negative vertical sync. which comes from Pin 32 of IC101 is applied to Pin 10 of IC401 which accepts only TTL level vertical sync pulse .

II. Vertical oscillation

A. The vertical free running frequency is determined by R231 and C202 which is connected to Pin15 and Pin 16 of IC401.

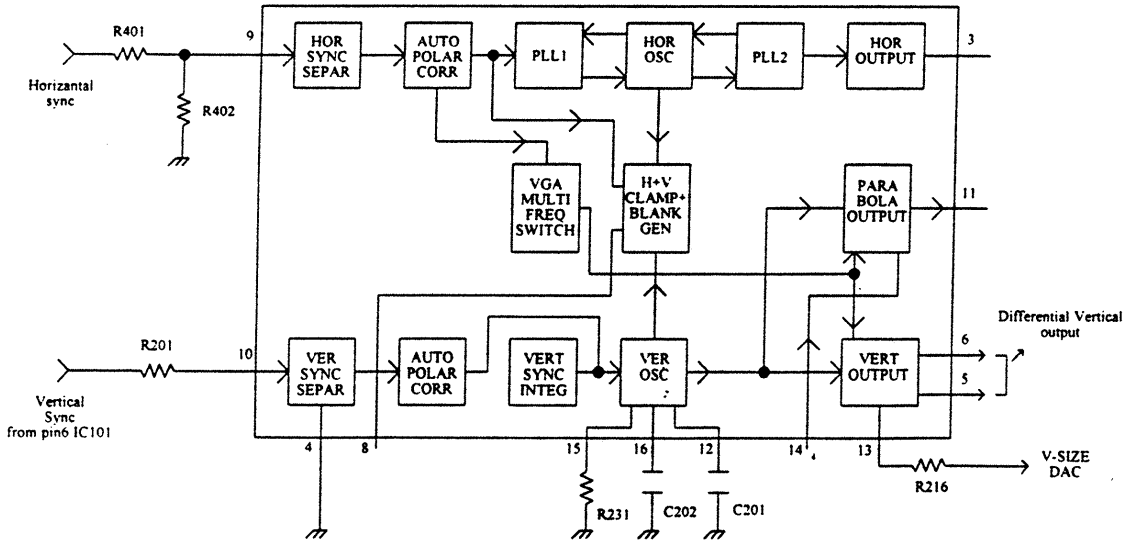
B. The vertical sync. pulse, derived from the sync input (Pin 10 of IC401), directly synchronizes the vertical oscillator.

III. V-size control

A. With a DC Current flow in Pin 13 of IC401, the amplitude of differential output currents can be set.

B. Vertical size are DC current controlled, it can be varied by micro processer DAC O/P.

Vertical Drive and Vertical Size Control



6-6. VERTICAL OUTPUT, BLANKING AND SHIFT CONTROL

I. The differential current outputs (Pin 5 and Pin 6) of IC401 (TDA4852) are connected to the " + " and " – " inputs (Pin 1 and Pin2) of IC201 (TDA4866).

II. The output stage IC201 (TDA 4866) is in principle a high gain operational amplifier with a buffer stage to supply the deflection current.

III. By varying resistor R206 and R207, one can set the desired deflection current. This can be calculated with:

I defl = Iin (diff) X (R206/R207).

I defl: the deflection current flowing through the vertical deflection yoke.

Iin (diff) : the differential input current . Derived from Pin 5 and Pin 6 of IC401.

IV. Vertical shift control

The vertical shift control is used to center the picture vertically and it can be achieved by supplying extra current to Pin 2 of IC201.

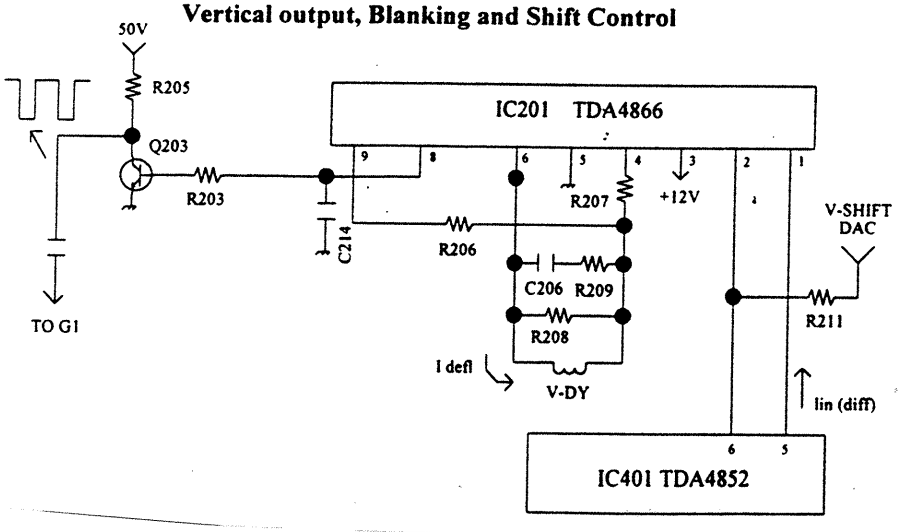
V. Vertical blanking circuit

A. During vertical retrace, the electron beam will sweep from the bottom to the top of the screen. The horizontal scan continues during vertical retrace. Zigzag lines will be visible on the screen. Vertical blanking circuitry is used for suppressing these lines non visible on the screen during vertical retrace.

B. The vertical blanking pulse is obtained from Pin 8 of IC201, which is positive pulse.

C. The negative pulse will appear at the collector of Q203. It is applied to G1 via C210. At this time CRT is cut off and no retrace lines are visible.

Vertical output, Blanking and Shift Control



6-7. E/W CORRECTION, HORIZONTAL SIZE AND HORIZONTAL DC SHIFT

I. E/W Correction

A. Parabolic waveform from P11 of IC401 is amplified by IC402 and AC coupled to H-size control circuit.

B. The Amplitude of parabolic waveform from P11 of IC401 can be adjusted by controlling the output current of P13 via DAC vaule.

C. The output current of Pin13 of IC401 increases, the amplitude of parabolic waveform also increases.

II. H-size control

A. The voltage across C412 can be reduced by drawing a current via Q408 and Q407, which can be controlled by conducting Q417.

B. To increase conducting Q417 to decrease the base voltage of Q407, it will increase the current drawing by Q408 and increase the H-size. Oppositely it will decrease the H-size.

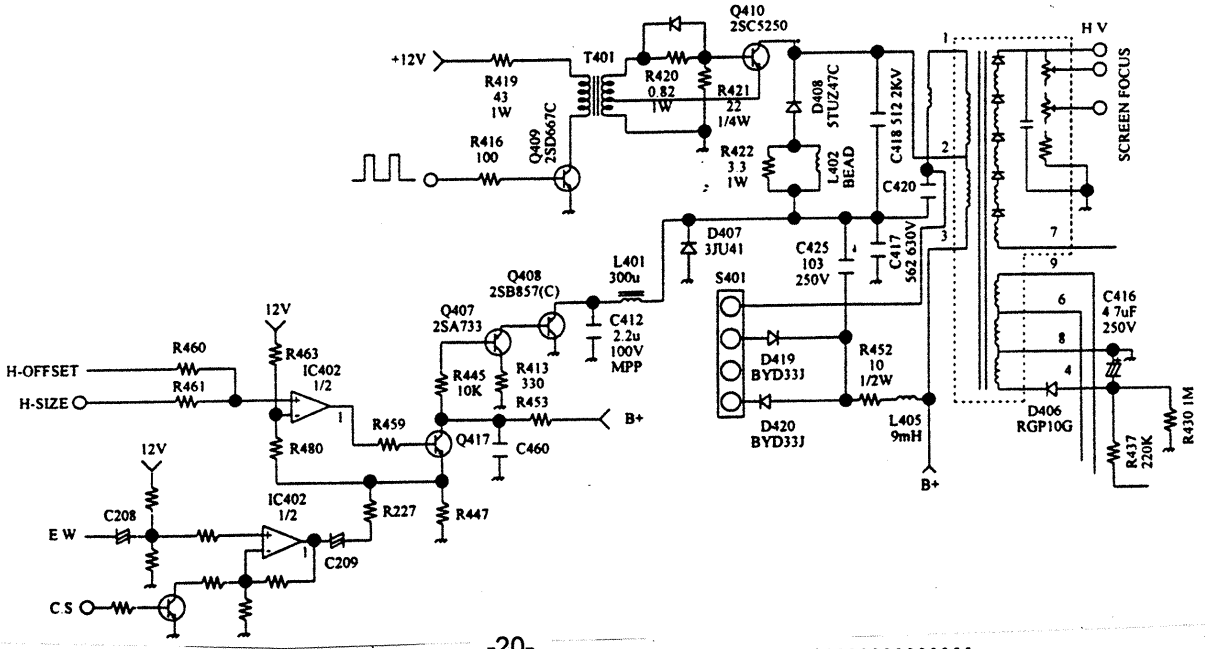
III. Horizontal DC shift

A. The raster can be centred horizontally with the horizontal DC shift.

B. The DC shift circuitry is capable of sending a small adjustable DC current through the deflection coil in either direction.

C. When S401 is switched to Pin 4, a small current will flow into the deflection coil via L405,R452,D420 and L404, the raster will shift right. Oppositely when S401 is switched to Pin2, the raster will shift left.

E/W Correction, Horizontal Size and Horizontal DC Shift



6-8. CONSTAST AND BRIGHTNESS CONTROL

I. With the contrast control VR405 the gain of R,G and B signals on the CRT cathode can be varied simultaneously.

II. The sub-contrast control VR406 is necessary to limit the maximum contrast level.

III. ABL (Automatic Beam current Limiter)

A. Without ABL the average beam current for full white patterns would exceed the maximum limit of beam current, thereby shortening life time of CRT and worsening screen performance due to local doming.

B. Beam current can be detected by measuring the current in the lower end of the FBT EHT winding.

C. When beam current flows into FBT, the voltage across C423 drops and the voltage at the emitter of Q411 will also drop.

D. The voltage on pin 10 of IC901 also drops, this will decrease the R,G and B output (pin13,15 and pin18) of IC901.

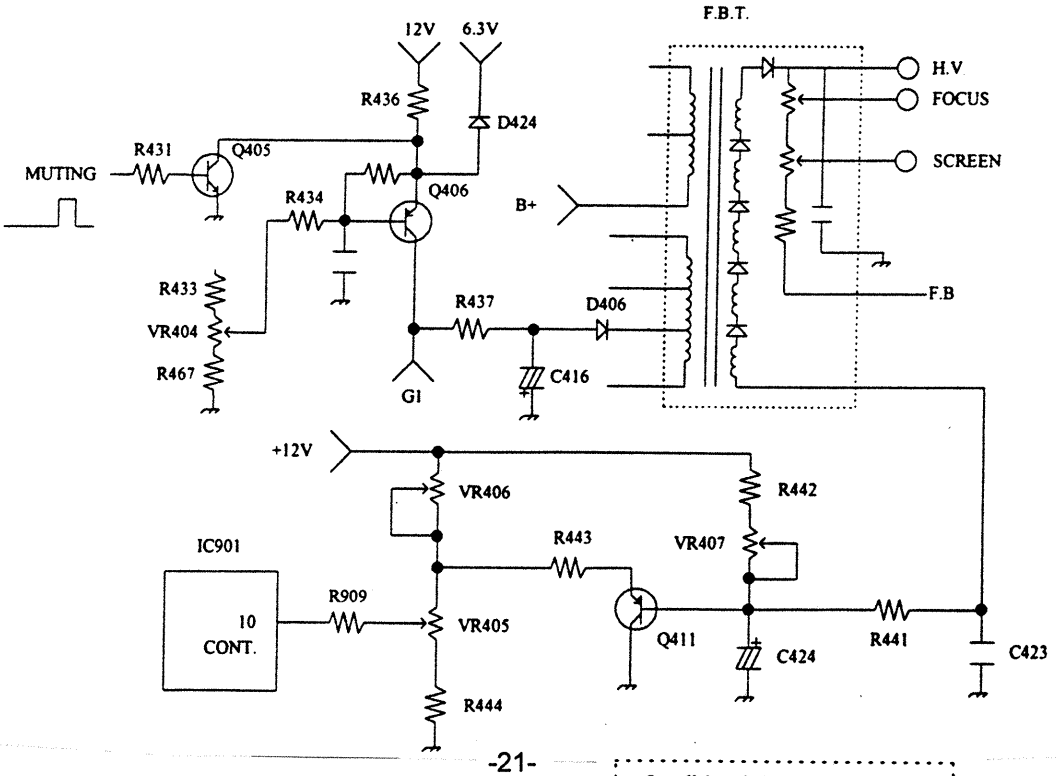
E. The ABL starting point can be adjusted with VR407.

IV. Brightness control is varied the base voltage of Q406, then the current flow in emitter will change the collecter voltage O/P.

V. Q405 is the mute circuit to blank CRT when mode changed.

VI. D424 is to speed Q406 off when power off to prevent spot light from damaging CRT.

Contrast and ABL Control Diagram :



6-9. SWITCHING POWER SUPPLY CIRCUIT

I. Primary side

A. Start up circuit

1. When the monitor is switched on, the DC voltage across C808 will charge C811 via R804 and R805 until the Vcc threshold (voltage on Pin 7 of IC801) is reached.
2. IC801 start driving the MOSFET switch Q801 and the SMPS will start up, the voltage for IC801 (Pin 8) is maintained by rectifying the AC voltage across winding 3,7 of T801 by D810,R810.

B. Voltage feedback

1. The primary sense voltage across C814 is obtained by rectifying the AC voltage on Pin3 of T801 by D811.
2. The sense voltage is applied to the error amplifier (Pin 2 of IC801) via R818.
3. With VR801 the desired secondary voltage is adjusted.

C. Current feedback

1. The current in the source of Q801 will produce a voltage drop across R812. This voltage is compared with the error voltage and determines the on time of Q801.
2. R813 and C819 are a filter network that removes spikes on the control voltage.

D. Driving MOSFET switch Q801

1. The output Pin 6 of IC801 is a special designed to drive power MOSFET directly.
2. D807 and R861 are for quick discharge of the gate capacitance from on to turn off the switch.

E. Oscillator and synchronization

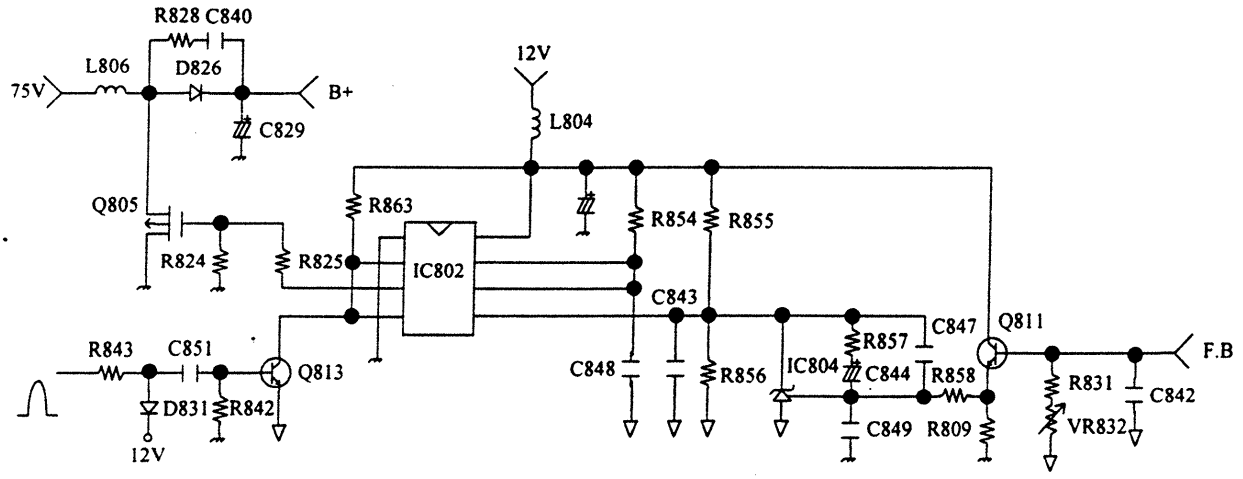
1. The oscillator in IC801 is synchronized on the horizontal flyback frequency. The trigger pulse is derived via a loop winding around the core of FBT.
2. Synchronizing is obtained by add a small flyback pulse to Pin 4 of IC801 via C818, R821, D814 and C817.
3. The free running frequency will produce when the trigger pulse is

not applied, which is determined by R823 and C816.

II. Secondary Side

A. B+ booster converter

1. IC802 is a timer used for PWM oscillator.
2. Flyback pulse via R843C851Q813 triggered the timer, then 12V charged C843 via R854, and Pin3 has a high level O/P.
3. The voltage across on C843 reaches the thresh-hold at Pin5, C843 start to discharge via internal CKT of IC802 and Pin3 has a low level O/P.
4. The output pulse at Pin3 is used to control Q805 for energy stored in L806.
5. When Q805 is off, The energy stored in L806 is boostered upon VCC input, via D826/C829 to rectify DC voltage for deflection use.
6. The feedback voltage from H.V is derived from R831VR832, Q811 is used as impedance buffer for error amplifier.
7. IC804 is the error amplifier, the output of cathode was shuntted to threshhold control Pin5 for PWM duty control.

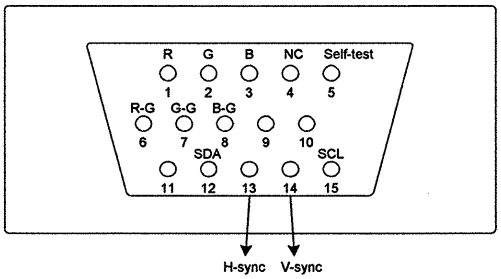


B. Power management

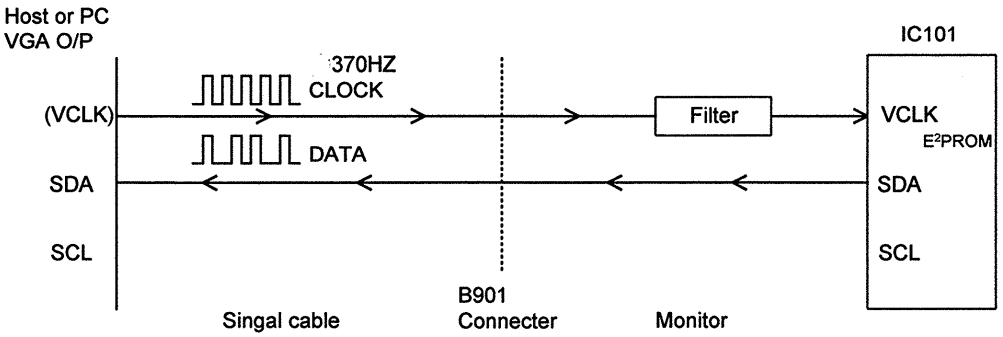
1. During normal operation, the base voltage of Q807 and Q809 is High, Q806 and Q808 are conducting. The color of LED is green.
2. In standby mode or suspend mode Q808 is still conducting, but Q806 is notconducting. At this time the base voltage of Q807 isLowand the color of LED is orange.
3. In off mode Q806 and Q808 are not conducting, the base voltage of Q807 and Q809 is Low. The color of LED is orange.

6-10. DDC FUNCTION (DISPLAY DATA CHANNEL)

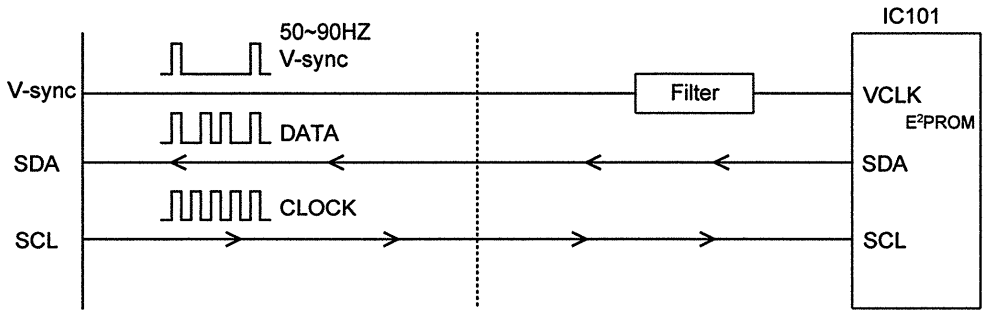
1. Software DDC is supported.
2. JD144 Support DDC1/2B to meet VESA standard.
3. DDC define a communication channel between a computer display and a host system. The channel can be used to carry information that can be used to configure the host graphics controller for optimal use of the display.
4. DDC1/2BThe display can continuously transmit its extended ID,"EDID",using DDC1.
   The display can also respond to a requests for "EDID". IF a DDC1 capable host is detected by a DDC capable display. the display will switch to DDC2, there is no means to switch from DDC2 to DDC1 unless the power is removed.
5. Signal cable D-sub pin definition for DDC



6. When monitor works in DDC1 mode, V-sync as a clock will increase its frequency for DATA transmitting.

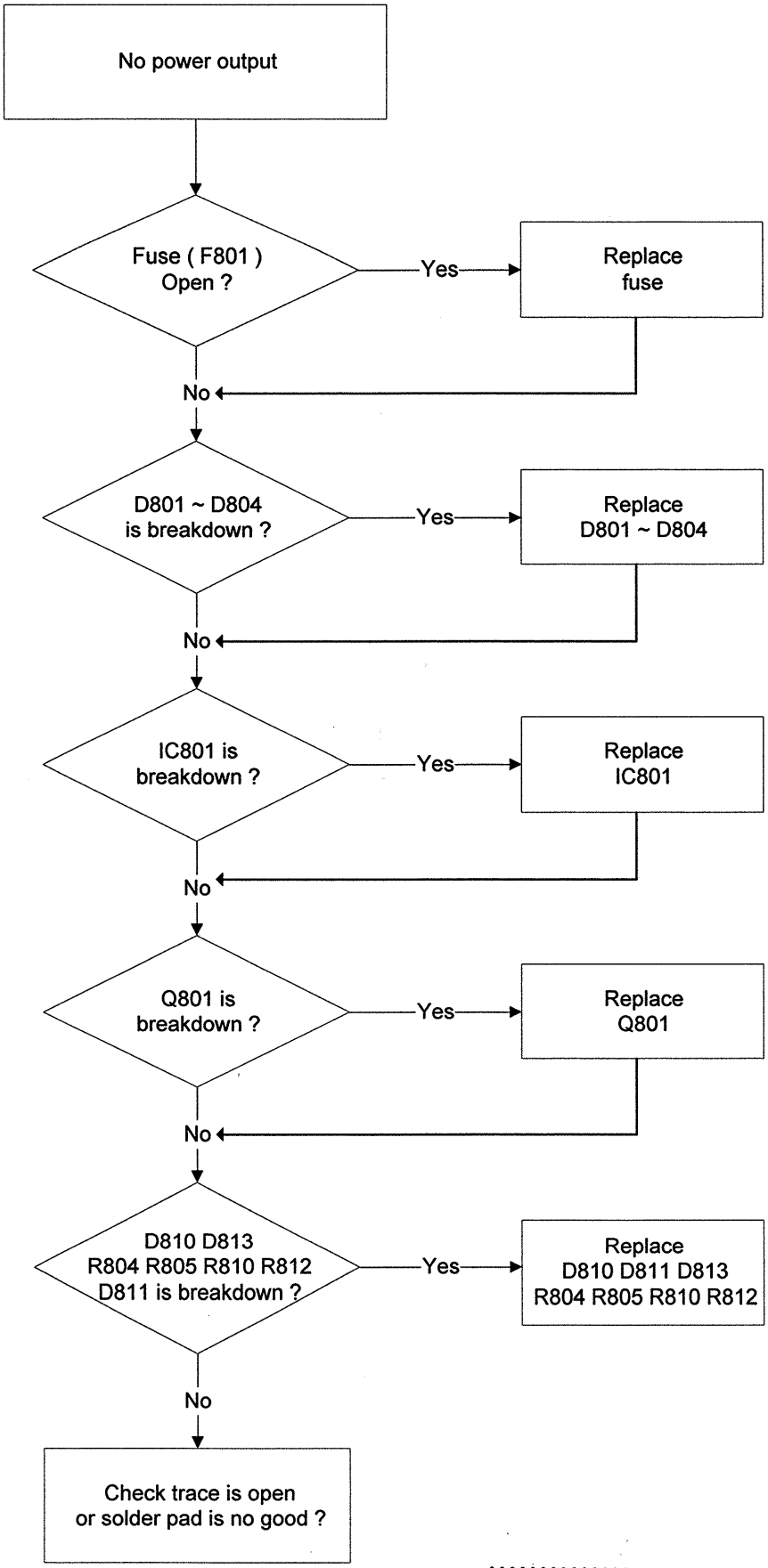


7. When monitor works in DDC2.

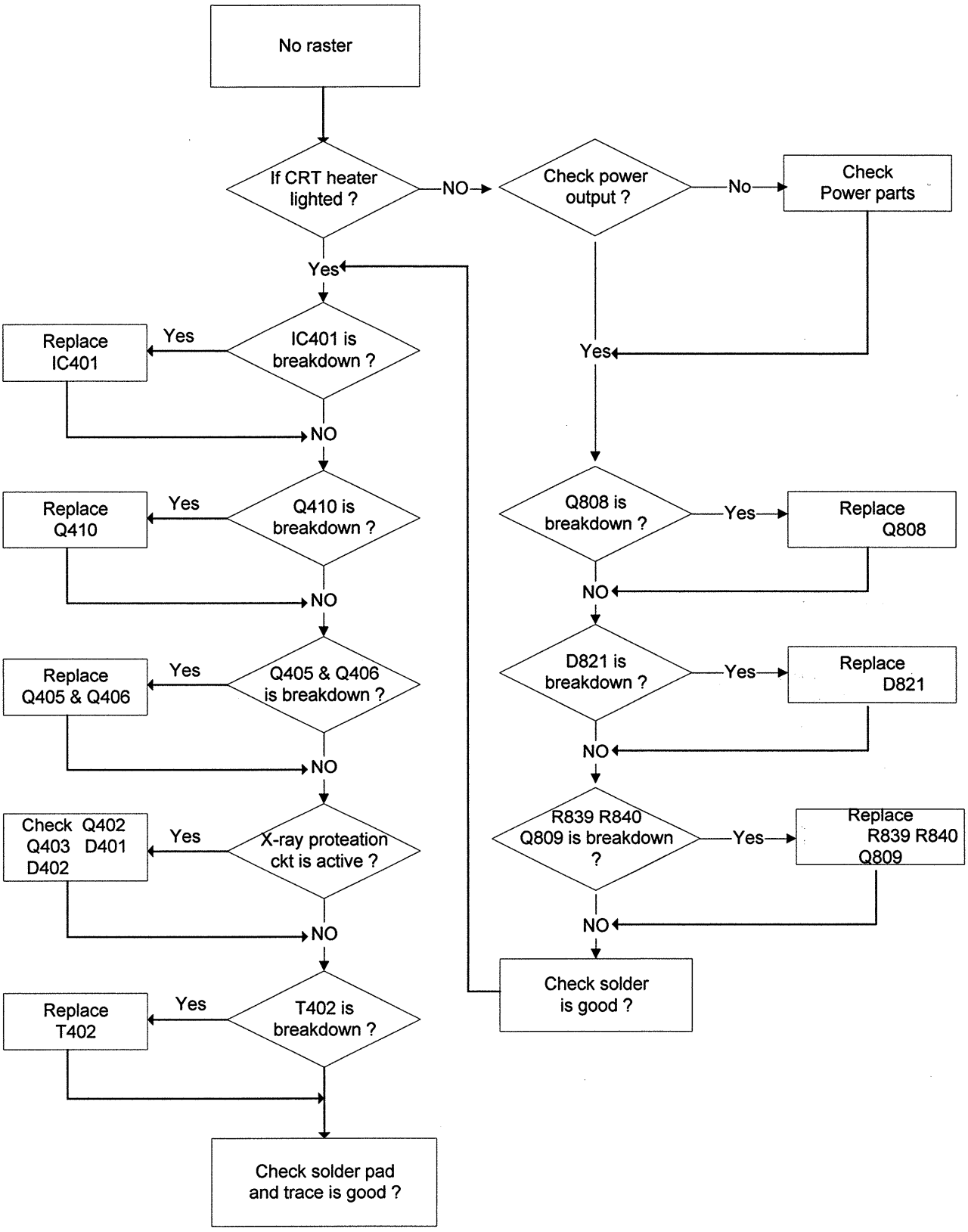


7. TROUBLE SHOOTING FLOW CHART:

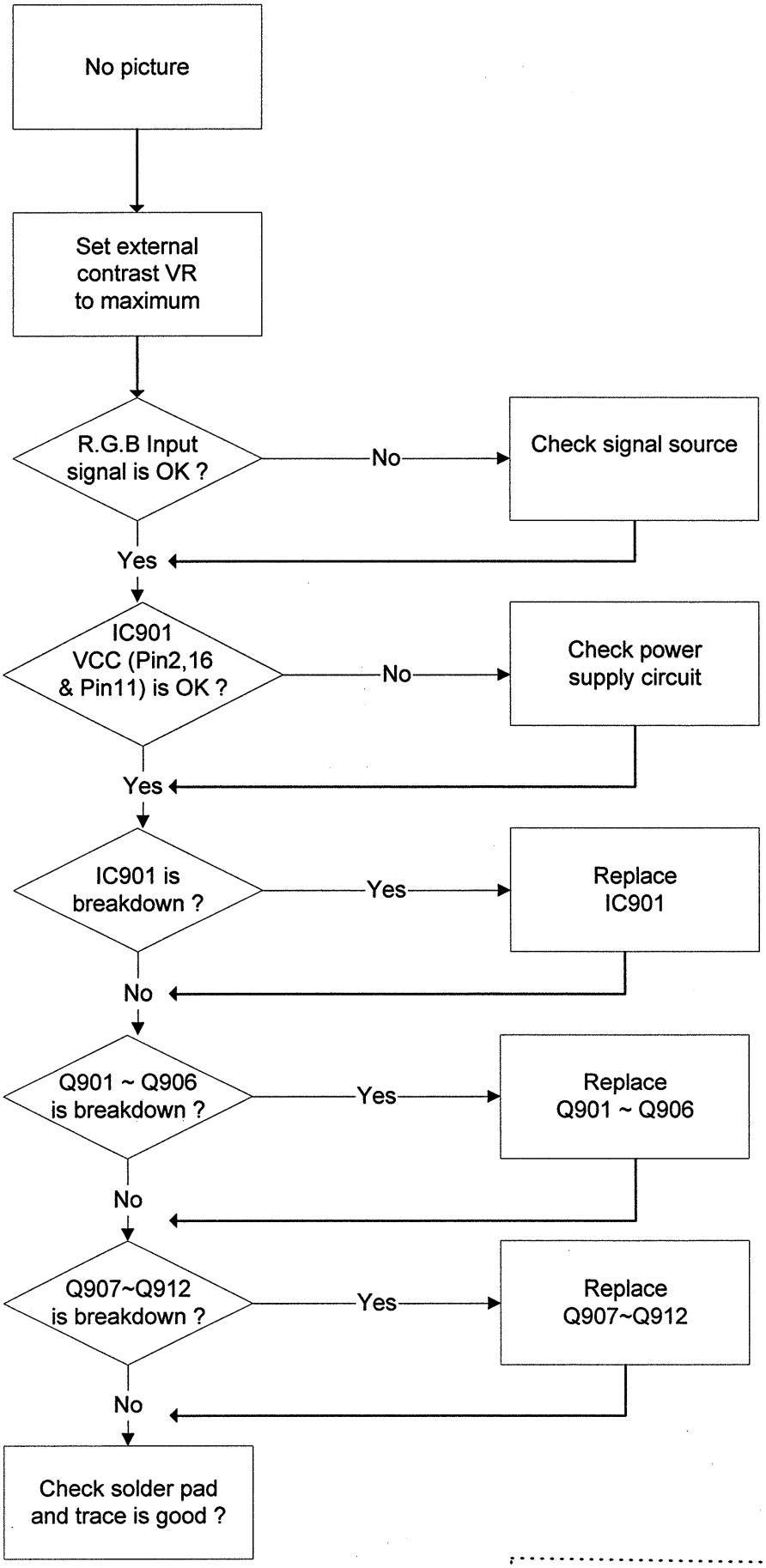
7-1. NO POWER OUTPUT



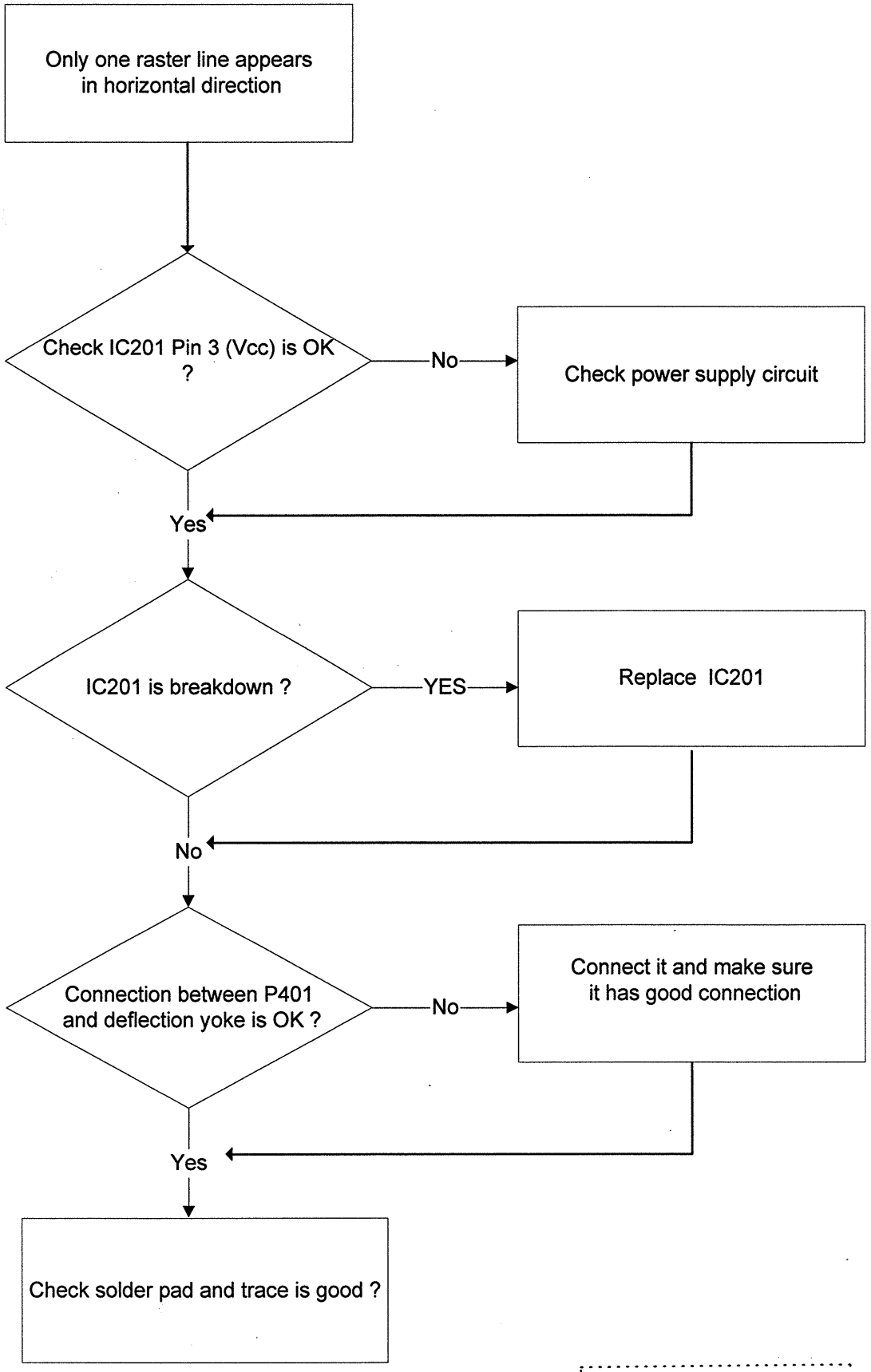
7-2. NO RASTER



7-3. NO PICTURE



7-4. ONLY ONE RASTER LINE APPEARS IN HORIZONTAL DIRECTION



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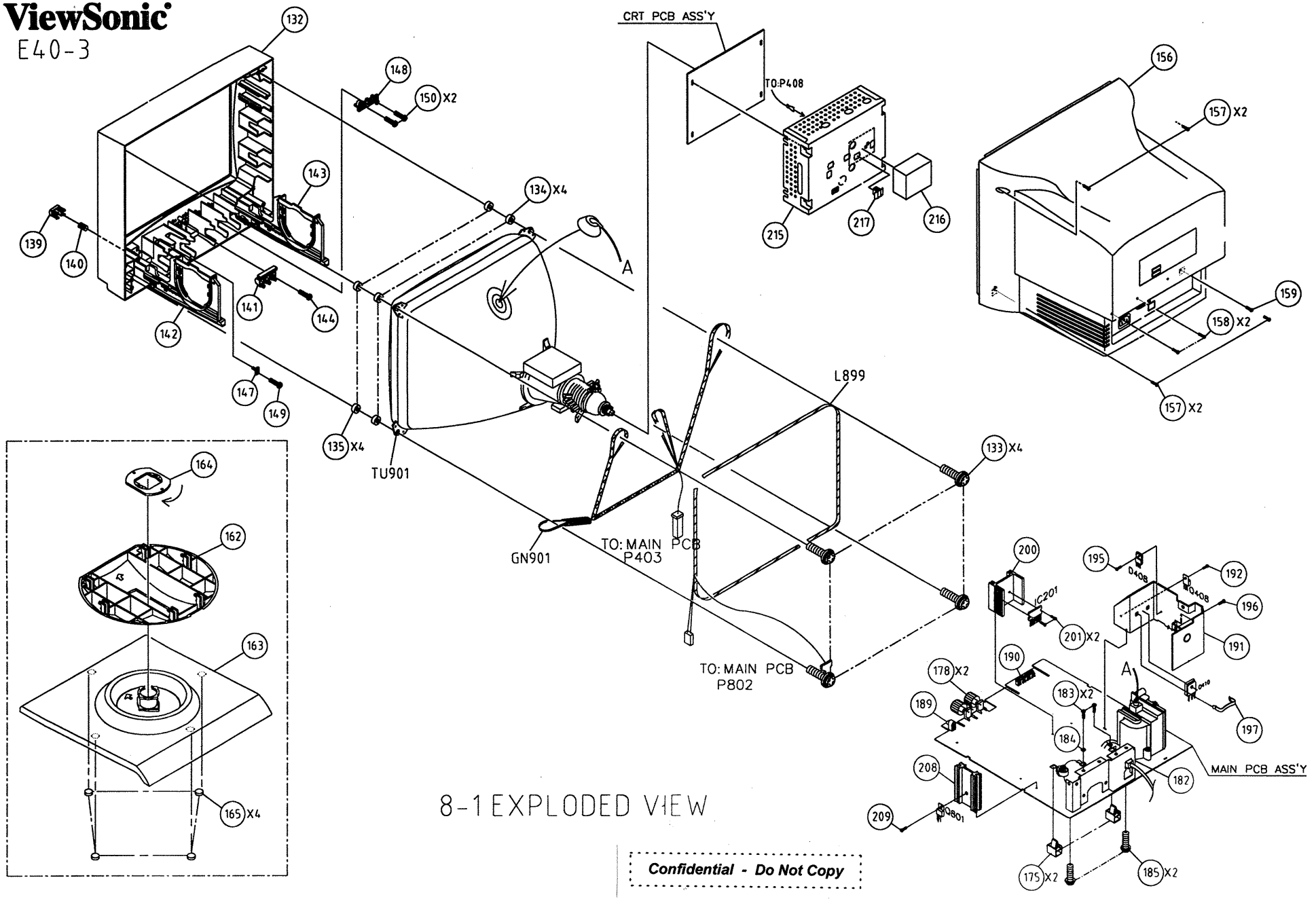

8-1 EXPLODED VIEW

8-2 EXPLODED PARTS LIST

Ref. No.	Source	Part No.	DESCRIPTION	SPEC.	Q'TY	REMARK
132		2024252201	PANEL	ABS 94V-0	1	
133		2080200400	SCREW,SPE T+	(SPE T+) SWCH 18A MFZN-C	4	
134		2061402902	BUSHING	CVM4967 SBR	4	
135		2090105041	WASHER,METAL	20X5.5D 2.0T	4	
139		2046251501	PUSH BUTTON	ABS 94HB G7258	1	
140		2105150200	SPRING	0.5	1	
141		2044251601	KNOB	ABS 94HB G7258	1	
142		2074151000	HOLDER	ABS 94HB	1	
143		2074151100	HOLDER	ABS 94HB	1	
144		2084730102	SCREW,BND T+	M3X10(BND T+)	1	
147		2053252300	INDICATOR	PMMA	1	
148		2053252400	INDICATOR	PMMA	1	
149		2084730102	SCREW,BND T+	M3X10(BND T+)	1	
150		2084730102	SCREW,BND T+	M3X10(BND T+)	2	
156		2022251801	CABI BACK	JD144V ABS 94V-0/G7258	1	
157		2084740202	SCREW,BND T+	M4X20(BND T+)	4	
158		2084730102	SCREW,BND T+	M3X10(BND T+)	2	
159		2084730102	SCREW,BND T+	M3X10(BND T+)	1	
162		2028250101	STAND	SWIVEL HIPS	1	
163	AA	2028250201	STAND	HIPS	1	
163	BA	2028250401	STAND	HIPS 94HB	1	
164	AB	2074150500	HOLDER	JD156G DURACON	1	
164	BB	2074107000	HOLDER	JK1472 DURACON M90	1	
165		2039801701	LEG	JD144B SBR 11.8X5t BLACK	4	
175		2074150700	HOLDER	NYLON 66	2	
178		2043250301	ROTARY KNOB	ABS 94-V0	2	
182	RA	2071950300	METAL FITTG	SECC T=1.2	1	
182	RB	2071950900	METAL FITTG	SECC T=1.0	1	
183		2082640102	SCREW	M4X10 P=0.7	2	
184		2092440200	WASHER,OT	D1=4.3 D2=8.5 T=0.45	1	
185		2084730102	SCREW,BND T+	M3X10(BND T+)	2	
189		2074150900	HOLDER	NYLON 66	1	
190		2074152000	HOLDER	NYLON 66	1	
191	RA	2072250900	HEAT SINK	ALUMINIUM A1100P	1	
191	RB	2072251400	HEAT SINK	ALUMINIUM A1100P	1	
192		2084730082	SCREW,BND T+	M3X8(BND T+)	1	
195		2084730082	SCREW,BND T+	M3X8(BND T+)	1	
196		2080250100	SCREW,SPE T+	BT3.5-20 KEY/IN	1	
197		2105250100	SPRING PLATE	SUS301 0.35t	1	
200		2072250800	HEAT SINK	ALUMINIUM A6063S-T5	1	
201		2084730102	SCREW,BND T+	M3X10(BND T+)	2	
208		2072209700	HEAT SINK	JK1565F	1	
209		2084730102	SCREW,BND T+	M3X10(BND T+)	1	
215	RA	2071650500	SHIELD PLATE	SPTE T=0.3	1	
215	RB	2071650700	SHIELD PLATE	SPTE T=0.3	1	
216		2061250300	SPONGE	JD145K 50X80X35t Pu FOAM94HF-	1	
217		2074152600	HOLDER	PC 94V0	1	

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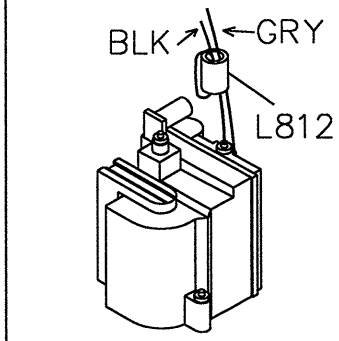
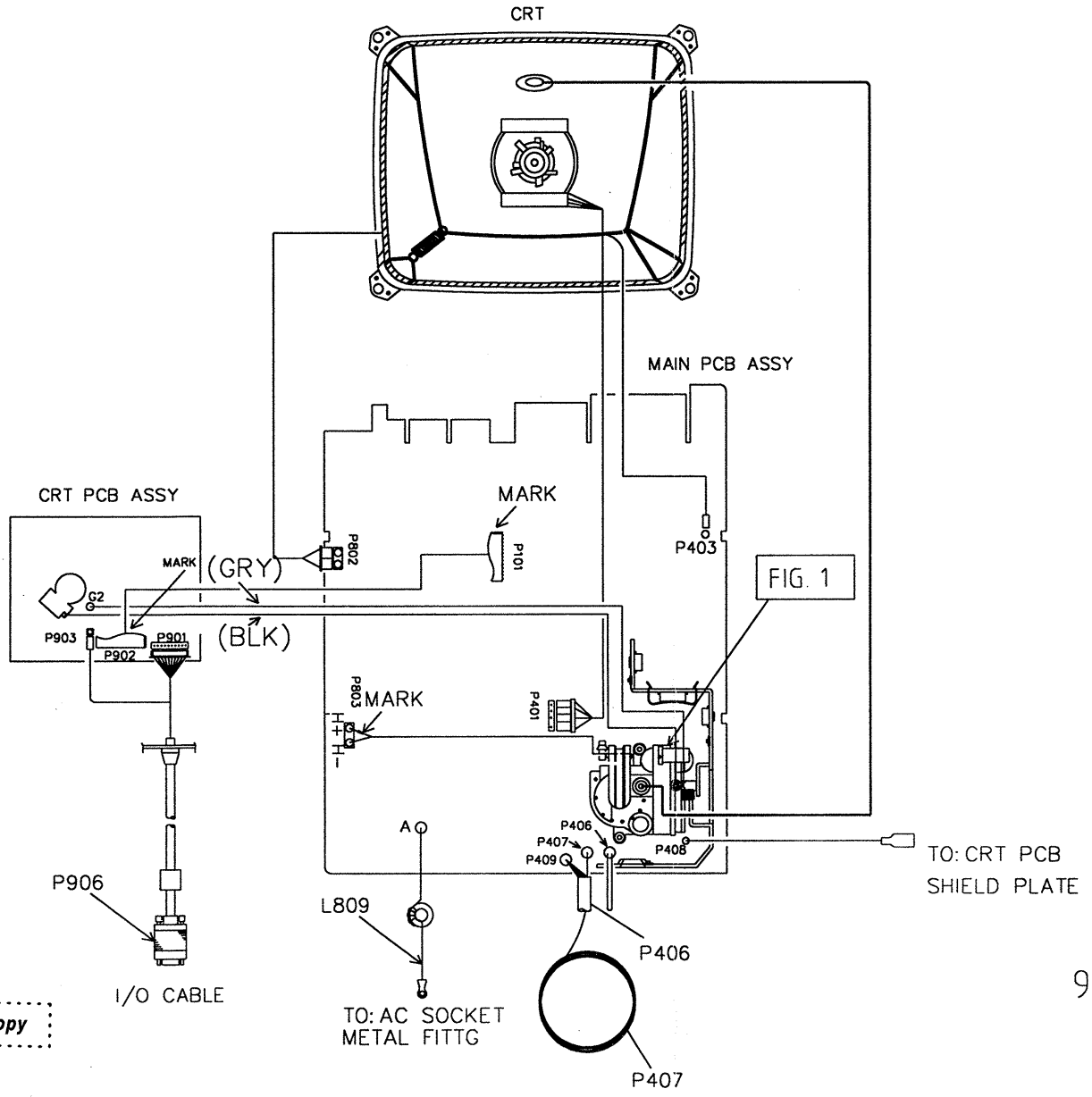
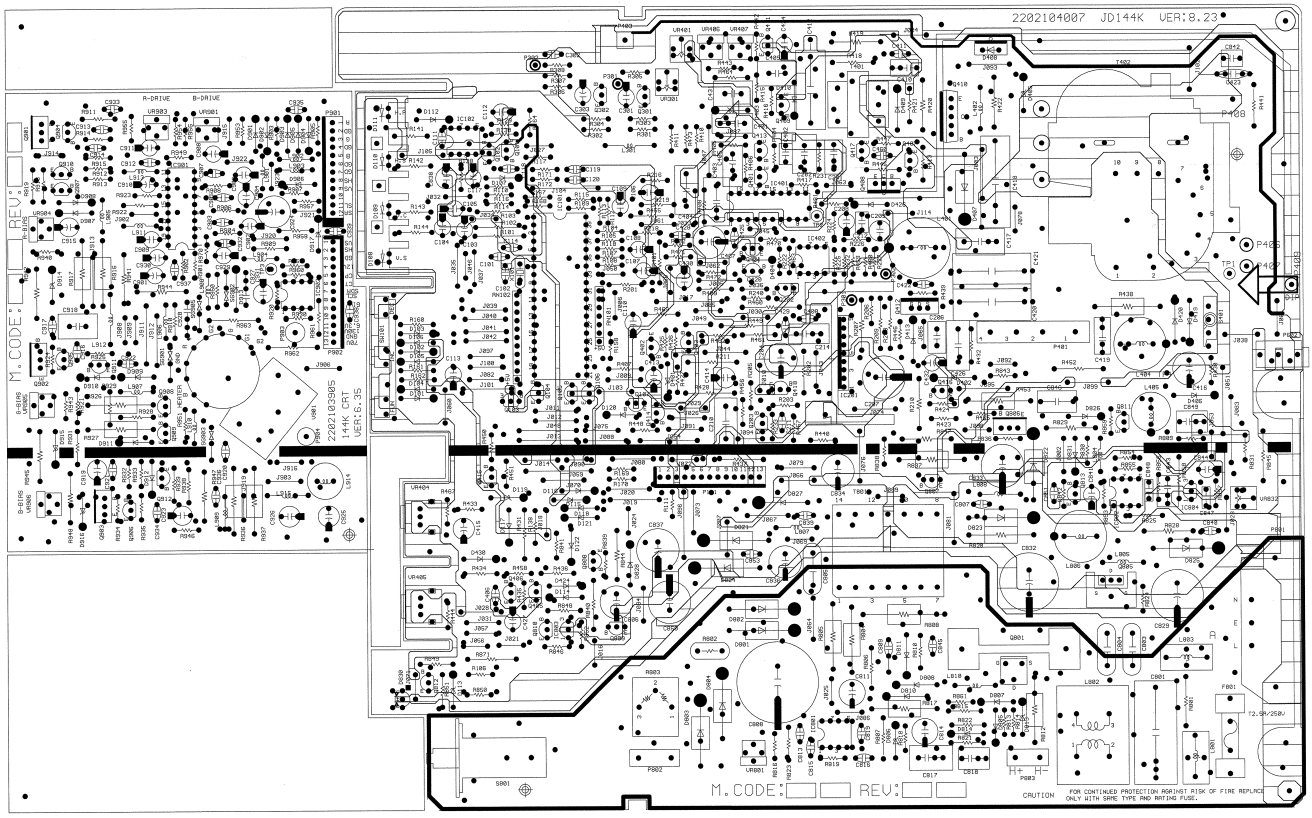




9. WIRING DIAGRAM



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MARK	DATE	CONTENT OF MODIFY	SIGN	DRAWN	CHECK	APPROVAL	ISSUE
				ViewSonic Corporation			
				DRAW NAME	PARTS LOCATION AND WIRING		
				DRAW NO. 98A	7998C1	NEXT:X	REV:
				E40-3			

11. ELECTRICAL PARTS LIST

When you place a parts order, be sure to indicate the following data on the order:

- Location No.
- Parts No.
- Description

CRT P.C.BOARD

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPEC.			REMARK
C901		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C902		2333610591	CAP,MINI ELE 105'C	CE04W	1.000UF	50V	M
C903		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C904		2333610591	CAP,MINI ELE 105'C	CE04W	1.000UF	50V	M
C905		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C906		2333610591	CAP,MINI ELE 105'C	CE04W	1.000UF	50V	M
C907		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C908		2333447691	CAP,MINI ELE 105'C	CE04W	47.000UF	25V	M
C909		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C910		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C911		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C912		2281156191	CAP,CER	CK45B	560.000PF	50V	K
C913		2281133191	CAP,CER	CK45B	330.000PF	50V	K
C914		2272151091	CAP,CER	CC45CH	51.000PF	50V	J
C915		2333910591	CAP,MINI ELE 105'C	CE04W	1.000UF	160V	M
C916		2272162091	CAP,CER	CC45CH	62.000PF	50V	J
C917		2281133191	CAP,CER	CK45B	330.000PF	50V	K
C918		2291510491	CAP,MYL	CQ92M	0.100UF	100V	K
C919		2333910591	CAP,MINI ELE 105'C	CE04W	1.000UF	160V	M
C921		2281133191	CAP,CER	CK45B	330.000PF	50V	K
C922		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C923		2333910591	CAP,MINI ELE 105'C	CE04W	1.000UF	160V	M
C925		2333810691	CAP,MINI ELE 105'C	CE04W	10.000UF	100V	M
C926		2333910591	CAP,MINI ELE 105'C	CE04W	1.000UF	160V	M
C927		2283110291	CAP,CER	CK45B	1000.000PF	500V	K
C928	RA	2285210291	CAP,CER	CK45B	1000.000PF	2KV	K
C928	RB	2285610291	CAP,CER	CK45E	1000.000PF	2KV	Z
C929		2333447691	CAP,MINI ELE 105'C	CE04W	47.000UF	25V	M
C930		2333447691	CAP,MINI ELE 105'C	CE04W	47.000UF	25V	M
C932		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C933		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C934		2272156091	CAP,CER	CC45CH	56.000PF	50V	J
C935		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C937		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C938		2272147091	CAP,CER	CC45CH	47.000PF	50V	J
C939		2272147091	CAP,CER	CC45CH	47.000PF	50V	J
D907		2363600195	DIODE,SWITCH	1N4148			
D909		2363600195	DIODE,SWITCH	1N4148			
D911		2363600195	DIODE,SWITCH	1N4148			
D913	RA	2363218495	DIODE,RECT	BYD33J		PHILIPS	
D913	RB	2363207895	DIODE,RECT	1N4937		FAGOR	
D914	RA	2363510695	DIODE,ZENER	HZ33-2 32.2-33.6V 0.5W		HITACHI	
D914	RB	2363503295	DIODE,ZENER	RD33EB3 30.90V-32.50V 0.5W			
D915	RA	2363510695	DIODE,ZENER	HZ33-2 32.2-33.6V 0.5W		HITACHI	
D915	RB	2363503295	DIODE,ZENER	RD33EB3 30.90V-32.50V 0.5W			
D916	RA	2363510695	DIODE,ZENER	HZ33-2 32.2-33.6V 0.5W		HITACHI	
D916	RB	2363503295	DIODE,ZENER	RD33EB3 30.90V-32.50V 0.5W			
IC901		2365318700	IC,LINEAR	TLS1233N		TI	
L904		2372122095	COIL,PEAKING	TDK SPT0305SA 22.000UH J			
L905		2372222995	COIL,PEAKING	2.20UH K R<0.25 I 630mA			
L906		2372233995	COIL,PEAKING	3.30UH K R<0.30 I 575mA			
L907		2372222995	COIL,PEAKING	2.20UH K R<0.25 I 630mA			
L908		2372239995	COIL,PEAKING	3.90uH K R<0.32 I<555mA			
L909		2372268995	COIL,PEAKING	6.8uH K R<0.45 I<470mA			
L910		2372239995	COIL,PEAKING	3.90uH K R<0.32 I<555mA			
L912		2379101495	FERRITE CORE	3.5X9X0.8			
L914		2371131000	COIL,CHOKE	JD156G 15UF 21.5T REF			
L915		2379101495	FERRITE CORE	3.5X9X0.8			
P901		2404338011	CONNECTOR	LEOCO 2521 12 PIN P=2.5			
P903		2404340000	CONNECTOR	LEOCO 1086 1PIN P=7.5			
Q901	RA	2361411300	XISTOR,NPN A	2SD2491C		HITACHI	
Q901	RB	2361412200	XISTOR,NPN A	HSD1609-D		HI-SINCE	
Q902	RA	2361411300	XISTOR,NPN A	2SD2491C		HITACHI	
Q902	RB	2361412200	XISTOR,NPN A	HSD1609-D		HI-SINCE	

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPEC.	REMARK
Q903	RA	2361411300	XISTOR,NPN A	2SD2491C	HITACHI
Q903	RB	2361412200	XISTOR,NPN A	HSD1609-D	HI-SINCE
Q904		2361302391	XISTOR,NPN R	2SC4367 T	HITACHI
Q905		2361302391	XISTOR,NPN R	2SC4367 T	HITACHI
Q906		2361302391	XISTOR,NPN R	2SC4367 T	HITACHI
Q907		2361400591	XISTOR,NPN A	2SD756A(D)	HITACHI
Q908		2361400591	XISTOR,NPN A	2SD756A(D)	HITACHI
Q909		2361400591	XISTOR,NPN A	2SD756A(D)	HITACHI
Q910		2361200491	XISTOR,PNP A	2SB716A(D)	HITACHI
Q911		2361200491	XISTOR,PNP A	2SB716A(D)	HITACHI
Q912		2361200491	XISTOR,PNP A	2SB716A(D)	HITACHI
R901		2233413395	RES,CBN 1/4 S	RD 1/4WS 13.00K	J
R902		2233413295	RES,CBN 1/4 S	RD 1/4WS 1.30K	J
R903		2233475095	RES,CBN 1/4 S	RD 1/4WS 75.00	J
R904		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R905		2233475095	RES,CBN 1/4 S	RD 1/4WS 75.00	J
R906		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R907		2233475095	RES,CBN 1/4 S	RD 1/4WS 75.00	J
R908		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R909		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R910		2233422295	RES,CBN 1/4 S	RD 1/4WS 2.20K	J
R911		2233456195	RES,CBN 1/4 S	RD 1/4WS 560.00	J
R912		2233433095	RES,CBN 1/4 S	RD 1/4WS 33.00	J
R913		2233439195	RES,CBN 1/4 S	RD 1/4WS 390.00	J
R914		2233415395	RES,CBN 1/4 S	RD 1/4WS 15.00K	J
R915		2233413195	RES,CBN 1/4 S	RD 1/4WS 130.00	J
R916		2235536203	RES,MTL 2	RS 2W 3.60K	J
R917		2235536203	RES,MTL 2	RS 2W 3.60K	J
R918		2237233095	RES,MTL 1/4 S	RS 1/4WS 33.00	J
R919		2237233095	RES,MTL 1/4 S	RS 1/4WS 33.00	J
R921		2233456195	RES,CBN 1/4 S	RD 1/4WS 560.00	J
R922		2233433095	RES,CBN 1/4 S	RD 1/4WS 33.00	J
R923		2233439195	RES,CBN 1/4 S	RD 1/4WS 390.00	J
R924		2233491295	RES,CBN 1/4 S	RD 1/4WS 9.10K	J
R925		2233413195	RES,CBN 1/4 S	RD 1/4WS 130.00	J
R926		2235536203	RES,MTL 2	RS 2W 3.60K	J
R927		2235536203	RES,MTL 2	RS 2W 3.60K	J
R928		2237233095	RES,MTL 1/4 S	RS 1/4WS 33.00	J
R929		2237233095	RES,MTL 1/4 S	RS 1/4WS 33.00	J
R931		2233456195	RES,CBN 1/4 S	RD 1/4WS 560.00	J
R932		2233433095	RES,CBN 1/4 S	RD 1/4WS 33.00	J
R933		2233439195	RES,CBN 1/4 S	RD 1/4WS 390.00	J
R934		2233415395	RES,CBN 1/4 S	RD 1/4WS 15.00K	J
R935		2233413195	RES,CBN 1/4 S	RD 1/4WS 130.00	J
R936		2235536203	RES,MTL 2	RS 2W 3.60K	J
R937		2235536203	RES,MTL 2	RS 2W 3.60K	J
R938		2237233095	RES,MTL 1/4 S	RS 1/4WS 33.00	J
R939		2237233095	RES,MTL 1/4 S	RS 1/4WS 33.00	J
R940		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R941		2232651095	RES,CBN 1/2	RD 1/2W 51.00	J
R942		2235410395	RES,MTL 1	RS 1W 10.00K	J
R943		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R944		2232651095	RES,CBN 1/2	RD 1/2W 51.00	J
R945		2235410395	RES,MTL 1	RS 1W 10.00K	J
R946		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R947		2232651095	RES,CBN 1/2	RD 1/2W 51.00	J
R948		2235410395	RES,MTL 1	RS 1W 10.00K	J
R949		2233456195	RES,CBN 1/4 S	RD 1/4WS 560.00	J
R950		2233420295	RES,CBN 1/4 S	RD 1/4WS 2.00K	J
R951		2233420295	RES,CBN 1/4 S	RD 1/4WS 2.00K	J
R953		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R954		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R955		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R956		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R962		2232610295	RES,CBN 1/2	RD 1/2W 1.00K	J
R963		2232633495	RES,CBN 1/2	RD 1/2W 330.00K	J
R970		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
TP3		2431400300	TERMINAL	TERMINAL	
U002		2202103905	PC BOARD	JD144K 94V0 CRT 110X140 V6.35	
VR901		2225120291	RES,SEMI FIX	0.1W B 2K N	
VR903		2225120291	RES,SEMI FIX	0.1W B 2K N	
VR904		2225150391	RES,SEMI FIX	0.1W B 50K N TAPPING(V)	
VR905		2225150391	RES,SEMI FIX	0.1W B 50K N TAPPING(V)	
VR906		2225150391	RES,SEMI FIX	0.1W B 50K N TAPPING(V)	

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPEC.			REMARK
V901	RA	2407402300	SOCKET	CRT SOCKET HPS0520-012401			
V901	RB	2407402600	SOCKET	CRT SOCKET SMK 6619			
V901	RC	2407403000	SOCKET	CRT SOCKET SFCBA0812A-SV FD			

MAIN P.C.BOARD

C101		2272133091	CAP,CER	CC45CH	33.000PF	50V	J
C102		2272133091	CAP,CER	CC45CH	33.000PF	50V	J
C103		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C104		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C105		2333647591	CAP,MINI ELE 105'C	CE04W	4.700UF	50V	M
C106		2333647591	CAP,MINI ELE 105'C	CE04W	4.700UF	50V	M
C107		2333647591	CAP,MINI ELE 105'C	CE04W	4.700UF	50V	M
C108		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C110		2333622591	CAP,MINI ELE 105'C	CE04W	2.200UF	50V	M
C111		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C112		2333647591	CAP,MINI ELE 105'C	CE04W	4.700UF	50V	M
C113		2333447691	CAP,MINI ELE 105'C	CE04W	47.000UF	25V	M
C114		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C117		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C118		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C119		2281122191	CAP,CER	CK45B	220.000PF	50V	K
C120		2281115191	CAP,CER	CK45B	150.000PF	50V	K
C201		2301122491	CAP,MTL	CF93M	0.220UF	50V	J
C202		2302210412	CAP,MTL	CF93M	0.100UF	100V	K
C204		2333847691	CAP,MINI ELE 105'C	CE04W	47.000UF	100V	M
C206		2291556391	CAP,MYL	CQ92M	0.056UF	100V	K
C207		2333322812	CAP,MINI ELE 105'C	CE04W	2200.000UF	16V	M
C208		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C209		2320647591	CAP,ELE NP	CE04W	4.700UF	50V	M
C210		2303210412	CAP,MTL	CF93M	0.100UF	250V	K
C214		2302222391	CAP,MTL	CF93M	0.022UF	100V	K
C301		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C302		2281133191	CAP,CER	CK45B	330.000PF	50V	K
C303		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C401		2302247391	CAP,MTL	CF93M	0.047UF	100V	K
C402		2291518291	CAP,MYL	CQ92M	1800.000PF	100V	K
C403		2295210391	CAP,PPP	CQ93T	0.010UF	100V	G
C404		2302210412	CAP,MTL	CF93M	0.100UF	100V	K
C405		2302247391	CAP,MTL	CF93M	0.047UF	100V	K
C406		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C407		2333422791	CAP,MINI ELE 105'C	CE04W	220.000UF	25V	M
C408		2291512391	CAP,MYL	CQ92M	0.012UF	100V	K
C409		2291510491	CAP,MYL	CQ92M	0.100UF	100V	K
C410		2301110491	CAP,MTL	CF93M	0.100UF	50V	J
C411		2281447291	CAP,CER	CK45F	4700.000PF	50V	Z
C412		2307122512	CAP,MTL	CF93T	2.200UF	100V	J
C413		2333410791	CAP,MINI ELE 105'C	CE04W	100.000UF	25V	M
C414		2333810691	CAP,MINI ELE 105'C	CE04W	10.000UF	100V	M
C415		2333447691	CAP,MINI ELE 105'C	CE04W	47.000UF	25V	M
C416		2334147591	CAP,MINI ELE 105'C	CE04W	4.700UF	250V	M
C417		2296656212	CAP,PPP	CQ93T	5600.000PF	630V	J
C418		2298851212	CAP,PPP	CQ93T	5100.000PF	2000V	J
C419		2283110291	CAP,CER	CK45B	1000.000PF	500V	K
C420		2307433412	CAP,MTL	CF93T	0.330UF	400V	J
C421		2307433412	CAP,MTL	CF93T	0.330UF	400V	J
C422		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C423		2283610391	CAP,CER	CK45E	0.010UF	500V	M
C424		2333622591	CAP,MINI ELE 105'C	CE04W	2.200UF	50V	M
C425		2272115191	CAP,CER	CC45CH	150.000PF	50V	J
C426		2303210312	CAP,MTL	CF93M	0.010UF	250V	K
C427		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C429		2291510391	CAP,MYL	CQ92M	0.010UF	100V	K
C430		2333610591	CAP,MINI ELE 105'C	CE04W	1.000UF	50V	M
C431		2291510491	CAP,MYL	CQ92M	0.100UF	100V	K
C432		2333610591	CAP,MINI ELE 105'C	CE04W	1.000UF	50V	M
C460		2281122191	CAP,CER	CK45B	220.000PF	50V	K
C801		2300822401	CAP,MTL		0.220UF	275V	M
C803		2287247212	CAP,CER	CK45F	4700.000PF	250VAC	M
C804		2287247212	CAP,CER	CK45F	4700.000PF	250VAC	M
C805		2287210312	CAP,CER	CK45F	0.010UF	250VAC	M
C806		2333447791	CAP,MINI ELE 105'C	CE04W	470.000UF	25V	M
C807	RA	2285133191	CAP,CER	CK45B	330.000PF	1KV	K
C807	RB	2285533191	CAP,CER	CK45E	330.000PF	1KV	Z

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPEC.			REMARK
C808		2352522714	CAP,ELE 85'C	CE69W	220.000UF	400V M	
C809		2285510301	CAP,CER	CK45E	0.010UF	1KV Z	
C811		2333410791	CAP,MINI ELE 105'C	CE04W	100.000UF	25V M	
C813		2281410491	CAP,CER	CK45F	0.100UF	50V Z	
C814		2333822691	CAP,MINI ELE 105'C	CE04W	22.000UF	100V M	
C815		2281122291	CAP,CER	CK45B	2200.000PF	50V K	
C816		2281168191	CAP,CER	CK45B	680.000PF	50V K	
C817		2296233291	CAP,PPP	CQ93T	3300.000PF	100V J	
C818		2302210391	CAP,MTL	CF93M	0.010UF	100V K	
C819		2281110291	CAP,CER	CK45B	1000.000PF	50V K	
C829		2334010712	CAP,MINI ELE 105'C	CE04W	100.000UF	200V M	
C832		2333822712	CAP,MINI ELE 105'C	CE04W	220.000UF	100V M	
C833		2333410812	CAP,MINI ELE 105'C	CE04W	1000.000UF	25V M	
C834		2333433791	CAP,MINI ELE 105'C	CE04W	330.000UF	25V M	
C836		2333922691	CAP,MINI ELE 105'C	CE04W	22.000UF	160V M	
C837		2333410812	CAP,MINI ELE 105'C	CE04W	1000.000UF	25V M	
C838		2333410791	CAP,MINI ELE 105'C	CE04W	100.000UF	25V M	
C839	RA	2285133191	CAP,CER	CK45B	330.000PF	1KV K	
C839	RB	2285533191	CAP,CER	CK45E	330.000PF	1KV Z	
C840	RA	2285110191	CAP,CER	CK45B	100.000PF	1KV K	
C840	RB	2285510191	CAP,CER	CK45E	100.000PF	1KV Z	
C841		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V M	
C842		2296247291	CAP,PPP	CQ93T	4700.000PF	100V J	
C843		2302210391	CAP,MTL	CF93M	0.010UF	100V K	
C844		2333622691	CAP,MINI ELE 105'C	CE04W	22.000UF	50V M	
C846		2303210412	CAP,MTL	CF93M	0.100UF	250V K	
C847		2296210291	CAP,PPP	CQ93T	1000.000PF	100V J	
C848		2296210291	CAP,PPP	CQ93T	1000.000PF	100V J	
C849		2302210412	CAP,MTL	CF93M	0.100UF	100V K	
C851		2281110291	CAP,CER	CK45B	1000.000PF	50V K	
D101		2363600195	DIODE,SWITCH	1N4148			
D102		2363600195	DIODE,SWITCH	1N4148			
D103		2363600195	DIODE,SWITCH	1N4148			
D104		2363600195	DIODE,SWITCH	1N4148			
D105		2363600195	DIODE,SWITCH	1N4148			
D106		2363600195	DIODE,SWITCH	1N4148			
D107		2363600195	DIODE,SWITCH	1N4148			
D108		2363703200	LED	L-53GD		KINGBRIG	
D109		2363703200	LED	L-53GD		KINGBRIG	
D110		2363703200	LED	L-53GD		KINGBRIG	
D111		2363703200	LED	L-53GD		KINGBRIG	
D112		2363600195	DIODE,SWITCH	1N4148			
D113		2363513295	DIODE,ZENER	HZ6A-3 5.4-5.7V 0.5W		HITACHI	
D114		2363600195	DIODE,SWITCH	1N4148			
D115		2363600195	DIODE,SWITCH	1N4148			
D116		2363600195	DIODE,SWITCH	1N4148			
D120		2233410295	RES,CBN 1/4 S	RD 1/4WS	1.00K	J	
D401	RA	2363512195	DIODE,ZENER	HZ20-3 20.2-21.1V 0.5W		HITACHI	
D401	RB	2363508095	DIODE,ZENER	MTZJ22A		ROHM	
D402	RA	2363218495	DIODE,RECT	BYD33J		PHILIPS	
D402	RB	2363207895	DIODE,RECT	1N4937		FAGOR	
D403	RA	2363514295	DIODE,ZENER	HZ11B-3 10.7-11.1V 0.5W		HITACH	
D403	RB	2363508195	DIODE,ZENER	MTZ11B			
D404		2363600195	DIODE,SWITCH	1N4148			
D405		2363511795	DIODE,ZENER	RD6.8EB3 6.66-7.01V 0.5W			
D406	RA	2363218495	DIODE,RECT	BYD33J		PHILIPS	
D406	RB	2363207895	DIODE,RECT	1N4937		FAGOR	
D407	RA	2363213912	DIODE,RECT	FUF5407 3.0A 800V		FAGOR	
D407	RB	2363213995	DIODE,RECT	FUF5407 3.0A 800V		FAGOR	
D408	RA	2363213800	DIODE,RECT	5TUZ47C TR 1US I 5A		TOSHIBA	
D408	RB	2363214300	DIODE,RECT	FMP-G2FS		SANKEN	
D409		2363216695	DIODE,RECT	1N5819		TSC	
D410		2363600195	DIODE,SWITCH	1N4148			
D413		2363207895	DIODE,RECT	1N4937		FAGOR	
D419	RA	2363218495	DIODE,RECT	BYD33J		PHILIPS	
D419	RB	2363207895	DIODE,RECT	1N4937		FAGOR	
D420	RA	2363218495	DIODE,RECT	BYD33J		PHILIPS	
D420	RB	2363207895	DIODE,RECT	1N4937		FAGOR	
D424		2363600195	DIODE,SWITCH	1N4148			
D430		2363600195	DIODE,SWITCH	1N4148			
D801	RA	2363216812	DIODE,RECT	1N5406		TSC	
D801	RB	2363216295	DIODE,RECT	1N5406 3A 600V		FAGOR	
D802	RA	2363216812	DIODE,RECT	1N5406		TSC	
D802	RB	2363216295	DIODE,RECT	1N5406 3A 600V		FAGOR	

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPEC.	REMARK
D803	RA	2363216812	DIODE,RECT	1N5406	TSC
D803	RB	2363216295	DIODE,RECT	1N5406 3A 600V	FAGOR
D804	RA	2363216812	DIODE,RECT	1N5406	TSC
D804	RB	2363216295	DIODE,RECT	1N5406 3A 600V	FAGOR
D805		2363600195	DIODE,SWITCH	1N4148	
D806	RA	2363512195	DIODE,ZENER	HZ20-3 20.2-21.1V 0.5W	HITACHI
D806	RB	2363508095	DIODE,ZENER	MTZJ22A	ROHM
D806	RC	2363507995	DIODE,ZENER	MTZJ22B	ROHM
D807		2363600195	DIODE,SWITCH	1N4148	
D808		2363201195	DIODE,RECT	BA159	FAGOR
D810	RA	2363218495	DIODE,RECT	BYD33J	PHILIPS
D810	RB	2363207895	DIODE,RECT	1N4937	FAGOR
D811	RA	2363218495	DIODE,RECT	BYD33J	PHILIPS
D811	RB	2363207895	DIODE,RECT	1N4937	FAGOR
D813	RA	2363512195	DIODE,ZENER	HZ20-3 20.2-21.1V 0.5W	HITACHI
D813	RB	2363508095	DIODE,ZENER	MTZJ22A	ROHM
D813	RC	2363507995	DIODE,ZENER	MTZJ22B	ROHM
D814		2363600195	DIODE,SWITCH	1N4148	
D821	RA	2363214712	DIODE,RECT	30DF2	IR
D821	RB	2363213012	DIODE,RECT	MR852 3A 200V	FAGOR
D822	RA	2363214712	DIODE,RECT	30DF2	IR
D822	RB	2363218012	DIODE,RECT	HER304E6	TSC
D823		2363213912	DIODE,RECT	FUF5407 3.0A 800V	FAGOR
D825	RA	2363214712	DIODE,RECT	30DF2	IR
D825	RB	2363212900	DIODE,RECT	BYM36C	PHILIPS
D825	RC	2363208712	DIODE,RECT	3JU41	
D826		2363600195	DIODE,SWITCH	1N4148	
D827	RA	2363218495	DIODE,RECT	BYD33J	PHILIPS
D827	RB	2363207895	DIODE,RECT	1N4937	FAGOR
D828	RA	2363218495	DIODE,RECT	BYD33J	PHILIPS
D828	RB	2363207895	DIODE,RECT	1N4937	FAGOR
D830		2363703400	LED	KINGBRIGHT L-59YGW	
FS801		2407213100	HOLDER,FUSE	E-102 BSR-2A-H	
FS802		2407213100	HOLDER,FUSE	E-102 BSR-2A-H	
F801	RA	2213125254	FUSE	BEL 5ST 2.5A 250V	
F801	RB	2213125200	FUSE	BEL 5TT 2.5A 250V	
F801	RC	2213125208	FUSE	LITTLE 21802.5 2.5A 250V	
F801	RD	2213125209	FUSE	S506 2.5A/250V	BUSSMANN
IC101	RA	2365409700	IC,DIGITAL	JD144K(V.S)JEAN005V	WELTREND
IC101	RB	2365411700	IC,DIGITAL	JEAN 006/JD144	WELTREND
IC102		2365409000	IC,DIGITAL	AT24CO4-10PC	ATMEL
IC201		2365316900	IC,LINEAR	TDA4866	PHILIPS
IC401		2365316800	IC,LINEAR	TDA4852	PHILIPS
IC402	RA	2365310800	IC,LINEAR	LM358P	TI
IC402	RB	2365305100	IC,LINEAR	LM358N	NATIONAL
IC801		2365311500	IC,LINEAR	KA3842B	SAMSUNG
IC802		2365201710	IC,MONO	NE555P	TI
IC803	RA	2365307391	IC,LINEAR	TL431CLP	MOTOROLA
IC803	RB	2365319391	IC,LINEAR	TL431CLP	TI
IC804	RA	2365307391	IC,LINEAR	TL431CLP	MOTOROLA
IC804	RB	2365319391	IC,LINEAR	TL431CLP	TI
L401		2371105100	COIL,CHOKE	JD144K 300UH 18X18 0.1*30	
L402		2379101495	FERRITE CORE	3.5X9X0.8	
L404		2385503700	COIL,H LNR	JD144V2 13.47uH/OA 27.5T	
L405		2371131500	COIL,CHOKE	JD156H 9mH/2UEW0.2□ 440.5T	
L801		2371110400	COIL,CHOKE	HUA HJC- B	
L802		2371154100	COIL,CHOKE	TOKIN SS28V-08350(O)	
L803		2371110400	COIL,CHOKE	HUA HJC- B	
L804		2372110195	COIL,PEAKING	TDK SPT0305SA 100.000UH J	
L805		2379101495	FERRITE CORE	3.5X9X0.8	
L806		2371104900	COIL,CHOKE	JD144K 1.2mH 0.4X144.5T	
L807		2379101495	FERRITE CORE	3.5X9X0.8	
L808		2379101495	FERRITE CORE	3.5X9X0.8	
L809		2379101900	FERRITE CORE	CORE(u=1500)/1015#18 G&Y 270L	
L810		2379101495	FERRITE CORE	3.5X9X0.8	
L812		2379102000	FERRITE CORE	TR-11.8X7.3X15(J70) MAGNET	
P101		2427412440	WIRE HARNESS	13P/13P 1007#26 L=300 B-1N	
P102		2422325300	WIRE,VINYL	UL1007#24(7M) 250L ORA K:K	
P301		2422320600	WIRE,VINYL	UL1007#24(TM) 200L BLU K:K	
P302		2422315400	WIRE,VINYL	UL1007#24(TM) 150L YEL K:K	
P401		2404340003	CONNECTOR	LEOCO 1086 4PIN P=8.0	
P402		2427307003	LUG W/WIRE	LRTC4000/LFTC187F 1015#22 180L	
P403		2404340000	CONNECTOR	LEOCO 1086 1PIN P=7.5	
P404		2427307003	LUG W/WIRE	LRTC4000/LFTC187F 1015#22 180L	

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPEC.	REMARK
P405		2427307005	LUG W/WIRE	LYTC43/LFTC187F 1015#22 300L	
P406		2427309006	LUG W/WIRE	9193TCB W 1007#22 450L	
P407		2427309009	LUG W/WIRE	B1812T2B W 1007#18 2T&300L	
P408		2427307004	LUG W/WIRE	9193TCB/LFTC187F 1015#22 150L	
P801	RA	2407411400	SOCKET	POWER SOCKET SC-9R SUPERCPN	
P801	RB	2407411300	SOCKET	POWER SOCKET SS-7B-1C RONGFONG	
P801	RC	2407411200	SOCKET	POWER SOCKRT 7014 I-SHENG	
P802		2404340001	CONNECTOR	LEOCO 1086 2PIN P=10	
Q101	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q101	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q102	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q102	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q103	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q103	RB	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q104	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q104	RB	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q105	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q105	RB	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q106	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q106	RB	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q107	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q107	RB	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q108	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q108	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q108	RC	2361315991	XISTOR,NPN R	H945P	HITACHI
Q202	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q202	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q202	RC	2361315991	XISTOR,NPN R	H945P	HITACHI
Q203	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q203	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q203	RC	2361315991	XISTOR,NPN R	H945P	HITACHI
Q301		2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q302		2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q401	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q401	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q401	RC	2361315991	XISTOR,NPN R	H945P	HITACHI
Q402	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q402	RB	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q403	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q403	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q403	RC	2361315991	XISTOR,NPN R	H945P	HITACHI
Q405	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q405	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q405	RC	2361315991	XISTOR,NPN R	H945P	HITACHI
Q406		2361211291	XISTOR,PNP A	BF423	TOSHIBA
Q407	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q407	RB	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q408		2361210400	XISTOR,PNP A	2SB861WC	HITACHI
Q409		2361401991	XISTOR,NPN A	2SD667(C)	HITACHI
Q410	RA	2361302800	XISTOR,NPN R	BU2508DF	PHILIPS
Q410	RB	2361316400	XISTOR,NPN R	BU2508DX	PHILIPS
Q411	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q411	RB	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q412	RA	2361601800	FET,N-CH	IRF630	SAMSUNG
Q412	RB	2361604700	FET,N-CH	FS10UM-5	MITSUBIS
Q412	RC	2361603100	FET,N-CH	2SK2134	NEC
Q412	RD	2361605700	FET,N-CH	BUZ32	SIEMENS
Q413	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q413	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q413	RC	2361315991	XISTOR,NPN R	H945P	HITACHI
Q414	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q414	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q415	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q415	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q416	RA	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q416	RB	2361315991	XISTOR,NPN R	H945P	HITACHI
Q417		2361314791	XISTOR,NPN R	BF422	TOSHIBA
Q418	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q418	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q418	RC	2361315991	XISTOR,NPN R	H945P	HITACHI
Q420	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q420	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q421	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q421	RB	2361100491	XISTOR,PNP R	2SA733(P)	NEC

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPEC.	REMARK
Q801	RA	2361605000	FET,N-CH	2SK2645-01M	FUJI
Q801	RB	2361604300	FET,N-CH	FS7KM-12	MITSUBIS
Q805	RA	2361601800	FET,N-CH	IRF630	SAMSUNG
Q805	RB	2361604700	FET,N-CH	FS10UM-5	MITSUBIS
Q805	RC	2361604200	FET,N-CH	IRFS630	SAMSUNG
Q805	RD	2361604600	FET,N-CH	FS10KM-5	MITSUBIS
Q806	RA	2361200600	XISTOR,PNP A	2SB857(C)	HITACHI
Q806	RB	2361211000	XISTOR,PNP A	2SB857C	HI-SINCE
Q807	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q807	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q807	RC	2361315991	XISTOR,NPN R	H945P	HITACHI
Q808		2361111191	XISTOR,PNP R	2SA1020(Y)	TOSHIBA
Q809	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q809	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q809	RC	2361315991	XISTOR,NPN R	H945P	HITACHI
Q810		2361303291	XISTOR,NPN R	2SC2655(Y)	TOSHIBA
Q811	RA	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q811	RB	2361315991	XISTOR,NPN R	H945P	HITACHI
Q812	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q812	RB	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q813	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q813	RB	2361302591	XISTOR,NPN R	2SC945(P)	NEC
RN101		2259647207	RES,NETWORKS	RG PITCH=2.54 7P 1/8W 4.7K J	
RN102		2259647211	RES,NETWORKS	RG PITCH=2.54 11P 1/8W 4.7K J	
R101		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R102		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R103		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R104		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R105		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R106		2233439195	RES,CBN 1/4 S	RD 1/4WS 390.00	J
R108		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R109		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R110		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R112		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R114		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R115		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R116		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R117		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R118		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R119		2233422295	RES,CBN 1/4 S	RD 1/4WS 2.20K	J
R120		2233418195	RES,CBN 1/4 S	RD 1/4WS 180.00	J
R128		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R129		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R130		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R138		2233447495	RES,CBN 1/4 S	RD 1/4WS 470.00K	J
R141		2233447195	RES,CBN 1/4 S	RD 1/4WS 470.00	J
R142		2233447195	RES,CBN 1/4 S	RD 1/4WS 470.00	J
R143		2233447195	RES,CBN 1/4 S	RD 1/4WS 470.00	J
R144		2233447195	RES,CBN 1/4 S	RD 1/4WS 470.00	J
R158		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R160		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R161		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R162		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R164		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R167		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R168		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R169		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R170		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R171		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R172		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R201		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R202		2232610195	RES,CBN 1/2	RD 1/2W 100.00	J
R203		2233418395	RES,CBN 1/4 S	RD 1/4WS 18.00K	J
R205		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R206		2239220015	RES,PRE 1/4 S	RN 1/4WS 2.00K	F
R207		2235412995	RES,MTL 1	RS 1W 1.20	J
R208		2232647195	RES,CBN 1/2	RD 1/2W 470.00	J
R209		2232610095	RES,CBN 1/2	RD 1/2W 10.00	J
R210		2235433995	RES,MTL 1	RS 1W 3.30	J
R211		2233430395	RES,CBN 1/4 S	RD 1/4WS 30.00K	J
R216		2233436395	RES,CBN 1/4 S	RD 1/4WS 36.00K	J
R218		2233433395	RES,CBN 1/4 S	RD 1/4WS 33.00K	J
R222		2233420495	RES,CBN 1/4 S	RD 1/4WS 200.00K	J
R224		2233447495	RES,CBN 1/4 S	RD 1/4WS 470.00K	J

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPEC.		REMARK
R225		2233410495	RES,CBN 1/4 S	RD 1/4WS	100.00K	J
R226		2233410495	RES,CBN 1/4 S	RD 1/4WS	100.00K	J
R227		2233447395	RES,CBN 1/4 S	RD 1/4WS	47.00K	J
R231		2239222025	RES,PRE 1/4 S	RN 1/4WS	22.00K	F
R232		2233410495	RES,CBN 1/4 S	RD 1/4WS	100.00K	J
R240		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R301		2233462395	RES,CBN 1/4 S	RD 1/4WS	62.00K	J
R302		2233427395	RES,CBN 1/4 S	RD 1/4WS	27.00K	J
R303		2233447295	RES,CBN 1/4 S	RD 1/4WS	4.70K	J
R304		2233447295	RES,CBN 1/4 S	RD 1/4WS	4.70K	J
R305		2233447395	RES,CBN 1/4 S	RD 1/4WS	47.00K	J
R306		2233422295	RES,CBN 1/4 S	RD 1/4WS	2.20K	J
R307		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R308		2233462395	RES,CBN 1/4 S	RD 1/4WS	62.00K	J
R401		2233424195	RES,CBN 1/4 S	RD 1/4WS	240.00	J
R402		2233412295	RES,CBN 1/4 S	RD 1/4WS	1.20K	J
R404		2233491295	RES,CBN 1/4 S	RD 1/4WS	9.10K	J
R405		2233422295	RES,CBN 1/4 S	RD 1/4WS	2.20K	J
R406		2233439295	RES,CBN 1/4 S	RD 1/4WS	3.90K	J
R407		2233482395	RES,CBN 1/4 S	RD 1/4WS	82.00K	J
R408		2233468195	RES,CBN 1/4 S	RD 1/4WS	680.00	J
R409		2233447995	RES,CBN 1/4 S	RD 1/4WS	4.70	J
R410		2233415495	RES,CBN 1/4 S	RD 1/4WS	150.00K	J
R411		2233424195	RES,CBN 1/4 S	RD 1/4WS	240.00	J
R413		2233433195	RES,CBN 1/4 S	RD 1/4WS	330.00	J
R415		2233410295	RES,CBN 1/4 S	RD 1/4WS	1.00K	J
R416		2233410195	RES,CBN 1/4 S	RD 1/4WS	100.00	J
R418		2232615195	RES,CBN 1/2	RD 1/2W	150.00	J
R419		2235427995	RES,MTL 1	RS 1W	2.70	J
R420		2235482895	RES,MTL 1	RS 1W	0.82	J
R421		2233422095	RES,CBN 1/4 S	RD 1/4WS	22.00	J
R422		2235433995	RES,MTL 1	RS 1W	3.30	J
R423		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R424		2233447295	RES,CBN 1/4 S	RD 1/4WS	4.70K	J
R425		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R426		2233422295	RES,CBN 1/4 S	RD 1/4WS	2.20K	J
R427		2239291015	RES,PRE 1/4 S	RN 1/4WS	9.10K	F
R428		2239216025	RES,PRE 1/4 S	RN 1/4WS	16.00K	F
R430		2233410595	RES,CBN 1/4 S	RD 1/4WS	1.00M	J
R431		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R432		2233447995	RES,CBN 1/4 S	RD 1/4WS	4.70	J
R433		2233415495	RES,CBN 1/4 S	RD 1/4WS	150.00K	J
R434		2233422295	RES,CBN 1/4 S	RD 1/4WS	2.20K	J
R436		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R437		2232622495	RES,CBN 1/2	RD 1/2W	220.00K	J
R438		2235439195	RES,MTL 1	RS 1W	390.00	J
R439		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R440		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R441		2233410295	RES,CBN 1/4 S	RD 1/4WS	1.00K	J
R442		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R443		2233422195	RES,CBN 1/4 S	RD 1/4WS	220.00	J
R444		2233447195	RES,CBN 1/4 S	RD 1/4WS	470.00	J
R445		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R446		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R447		2239210015	RES,PRE 1/4 S	RN 1/4WS	1.00K	F
R448		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R449		2233475395	RES,CBN 1/4 S	RD 1/4WS	75.00K	J
R450		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R451		2233430395	RES,CBN 1/4 S	RD 1/4WS	30.00K	J
R452		2232610095	RES,CBN 1/2	RD 1/2W	10.00	J
R453		2235547303	RES,MTL 2	RS 2W	47.00K	J
R455		2233415495	RES,CBN 1/4 S	RD 1/4WS	150.00K	J
R456		2233415395	RES,CBN 1/4 S	RD 1/4WS	15.00K	J
R457		2233410495	RES,CBN 1/4 S	RD 1/4WS	100.00K	J
R458		2233439395	RES,CBN 1/4 S	RD 1/4WS	39.00K	J
R459		2239210015	RES,PRE 1/4 S	RN 1/4WS	1.00K	F
R460		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R461		2233436395	RES,CBN 1/4 S	RD 1/4WS	36.00K	J
R462		2233462295	RES,CBN 1/4 S	RD 1/4WS	6.20K	J
R463		2233415495	RES,CBN 1/4 S	RD 1/4WS	150.00K	J
R464		~~2233422395~~	~~RES,CBN 1/4 S~~	~~RD 1/4WS~~	~~2230395~~	RES,CBN 1/4 S RD 1/4WS 30.00K J
R465		2233422295	RES,CBN 1/4 S	RD 1/4WS	2.20K	J
R467		2233475395	RES,CBN 1/4 S	RD 1/4WS	75.00K	J
R469		2233410295	RES,CBN 1/4 S	RD 1/4WS	1.00K	J

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPEC.		REMARK
R470		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R471		2239236015	RES,PRE 1/4 S	RN 1/4WS	3.60K	F
R472		2233447195	RES,CBN 1/4 S	RD 1/4WS	470.00	J
R473		2239214015	RES,PRE 1/4 S	RN 1/4WS	1.40K	F
R480		2233427295	RES,CBN 1/4 S	RD 1/4WS	2.70K	J
R801		2232682495	RES,CBN 1/2	RD 1/2W	820.00K	J
R802	RA	2229201212	THERMISTOR,PTH	SCK-103 10+-20% 3A		THINKING
R802	RB	2229400612	THERMISTOR,NTC	NTC UPPERMOST N10SP010***-K2		
R803		2229301300	THERMISTOR,PTC	PTC 9+-20% PCA9ROS UPPERMOST		
R804		2235518403	RES,MTL 2	RS 2W	180.00K	J
R805		2235518403	RES,MTL 2	RS 2W	180.00K	J
R806		2233410595	RES,CBN 1/4 S	RD 1/4WS	1.00M	J
R807		2233410595	RES,CBN 1/4 S	RD 1/4WS	1.00M	J
R808		2235622303	RES,MTL 3	RS 3W	22.00K	J
R809		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R810		2233410095	RES,CBN 1/4 S	RD 1/4WS	10.00	J
R812		2235524803	RES,MTL 2	RS 2W	0.24	J
R813		2233410295	RES,CBN 1/4 S	RD 1/4WS	1.00K	J
R814		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R815		2233415195	RES,CBN 1/4 S	RD 1/4WS	150.00	J
R816		2233422295	RES,CBN 1/4 S	RD 1/4WS	2.20K	J
R817		2235539103	RES,MTL 2	RS 2W	390.00	J
R818		2233415395	RES,CBN 1/4 S	RD 1/4WS	15.00K	J
R819		2233415495	RES,CBN 1/4 S	RD 1/4WS	150.00K	J
R820		2235510103	RES,MTL 2	RS 2W	100.00	J
R821		2233447095	RES,CBN 1/4 S	RD 1/4WS	47.00	J
R822		2233468095	RES,CBN 1/4 S	RD 1/4WS	68.00	J
R823		2233430395	RES,CBN 1/4 S	RD 1/4WS	30.00K	J
R824		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R825		2233475095	RES,CBN 1/4 S	RD 1/4WS	75.00	J
R828		2235420195	RES,MTL 1	RS 1W	200.00	J
R829		2235410495	RES,MTL 1	RS 1W	100.00K	J
R830		2233420295	RES,CBN 1/4 S	RD 1/4WS	2.00K	J
R831		2233443395	RES,CBN 1/4 S	RD 1/4WS	43.00K	J
R836		2233430395	RES,CBN 1/4 S	RD 1/4WS	30.00K	J
R837		2235547103	RES,MTL 2	RS 2W	470.00	J
R838		2233410295	RES,CBN 1/4 S	RD 1/4WS	1.00K	J
R839		2233430395	RES,CBN 1/4 S	RD 1/4WS	30.00K	J
R840		2232618195	RES,CBN 1/2	RD 1/2W	180.00	J
R841		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R842		2233410295	RES,CBN 1/4 S	RD 1/4WS	1.00K	J
R843		2233422395	RES,CBN 1/4 S	RD 1/4WS	22.00K	J
R845		2232675395	RES,CBN 1/2	RD 1/2W	75.00K	J
R846		2239210015	RES,PRE 1/4 S	RN 1/4WS	1.00K	F
R847		2235468095	RES,MTL 1	RS 1W	68.00	J
R848		2233424195	RES,CBN 1/4 S	RD 1/4WS	240.00	J
R849		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R850		2233433195	RES,CBN 1/4 S	RD 1/4WS	330.00	J
R851		2233482195	RES,CBN 1/4 S	RD 1/4WS	820.00	J
R852		2239210015	RES,PRE 1/4 S	RN 1/4WS	1.00K	F
R853		2233410295	RES,CBN 1/4 S	RD 1/4WS	1.00K	J
R854		2233418395	RES,CBN 1/4 S	RD 1/4WS	18.00K	J
R855		2233447195	RES,CBN 1/4 S	RD 1/4WS	470.00	J
R856		2233410295	RES,CBN 1/4 S	RD 1/4WS	1.00K	J
R857		2233439295	RES,CBN 1/4 S	RD 1/4WS	3.90K	J
R858		2233424195	RES,CBN 1/4 S	RD 1/4WS	240.00	J
R859		2233410395	RES,CBN 1/4 S	RD 1/4WS	10.00K	J
R861		2233424195	RES,CBN 1/4 S	RD 1/4WS	240.00	J
SW101		2403701200	SWITCH,PU-TC	SKHH33P920-SV		FORWARD
S401	RA	2406200500	SWITCH,LEVER	EVQ-ROB		PANASONIC
S401	RB	2406200600	SWITCH,LEVER	BGL-0131		HUA-JIE
S401	RC	2406200700	SWITCH,LEVER	TLF1X3		HORNG CHIN
S801	RA	2403104400	SWITCH,PUSH	SFDLB11C7u		FORWARD
S801	RB	2403104500	SWITCH,PUSH	SY16-12-2(u99S2)/T		NOBLE
S801	RC	2403104800	SWITCH,PUSH	ESB82137V		PANASONI
TP2		2431400300	TERMINAL	TERMINAL		
TP4		2431400300	TERMINAL	TERMINAL		
T401		2385502100	COIL,H LNR	LS-BL942-008		
T402	RA	2385205700	FBT	ETF-39L2029AZ		MATSUSHI
T402	RB	2385205900	FBT	FEA583		SAMPO
T402E		2097400301	EYELET	BSS3-1/2H T=0.25 SN 3□□		
T801		2374205900	XFORMER,POWR	JD144K 400UH 0.29 OHM		
T801E		2097400301	EYELET	BSS3-1/2H T=0.25 SN 3□□		
U001		2202104009	PC BOARD	JD144K MAIN 94V0 296X245V10.25		

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPEC.	REMARK
VR301		2225150390	RES,SEMI FIX	0.1W B 50K N	
VR401		2225150191	RES,SEMI FIX	0.1W B 500 N TAPPING(V)	
VR404		2220112021	RES,V CBN 9	RK09K1110619(SV) 0.05W 10KB M	
VR405		2220112022	RES,V CBN 9	RK09K1110471(SV) 0.05W 10KB M	
VR406		2225120391	RES,SEMI FIX	0.1W B 20K N TAPPING(V)	
VR407		2225150391	RES,SEMI FIX	0.1W B 50K N TAPPING(V)	
VR801		2225110291	RES,SEMI FIX	0.1W B 1K N TAPPING(V)	
VR832		2225120390	RES,SEMI FIX	0.1W B 20K N	
X101		2369102701	XTAL,OSC	XTAL 8.0MHZ 30P/0.1mW	

OTHERS

P906		242750103~~6~~29	I/O CABLE	D-SUB 15P MALE~~/JST12P-1800L~~ /JST 12P DDC
GN901		2420102200	CRT WIRE	JD144J 0.12/64C 670L
L899		2385404300	COIL,ERASE	JD144K MPR2 0.4X60T 940L
TU901		2211014100	CRT ASSY	M34AFA83X16 U CPT
PD801		2427130003	POWER CORD	SVT 18/3C WHITE 1.83M (WALL TYPE)
PD801		2427130014	POWER CORD	H05VV-F3*0.75 VDE WALL 1.83M (EUROPE)
PD801		2427123008	POWER CORD	ISO11 HO5VV-F 0.75X3 1830L W 1 POWER CORD SVT 18/3C GRAY 1.5M (USA WALL TYPE)
PD801		2427114003	POWER CORD	3GX0.75MM 6A/250V 1.5M VDE (EU WALL TYPE)
PD801		2427125001	POWER CORD	H05VV-F 0.75/3C 2468 GRAY 1.5M (PC TYPE)

LOC NO.	OLD	NEW	ECR NO.	Cut-In Date	Cut-In S/N
R464	2233422395	2233430295	VSC-00054	26/1/99	6A90500753
P906	2427501036	2427501029	VSC-00057	24/1/99	6A90500001
PD801	2427130003	2427130001	VSC-00057	24/1/99	6A90500001
PD801	2427130014	2427114003	VSC-00061	26/1/99	6A90500001
PD801	2427123008	2427125001	VSC-00061	26/1/99	6A90500001